LIGHTWAVIN'

The Magazine For LightWave Animators

No. 5 March/April 1998
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SNAKING OBJECTS ALONG A PATH

REVIEWS

- Organic Modeling & Animation
- LW 3D Plug-in Power
- Leny CD-ROM Vol 2
- LightWave Lab 2
- Steamer Video
- Genesis VFX
- Pyromania II
- Realitools
- Key Pro

LIQUID METAL

Create T2 Type Effects!

PLACE WITH COMPUTER MAGAZINES

03>

0 74470 92596 5

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Looking for the perfect tools for the job?

Well, look no further! DNA Productions, the animation house behind Santa vs. the Snowman, chose IMPACT!, Particle Storm, and Lock & Key to achieve some very complicated effects in LightWave.

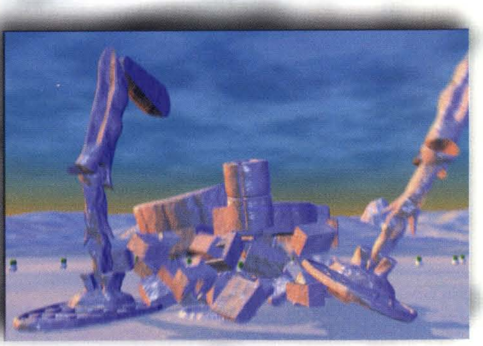
"There was just no way to animate a lot of the scenes without these plug-ins. It would have been very tedious and time consuming work," says Producer/Director John Davis.

IMPACT! was used to create real world physical reactions, such as the igloo walker collapsing. It can also be used for collisions, bouncing, and in any other situation that involves a LightWave object reacting realistically to its environment.

Particle Storm is the world's most popular particle animation system for LightWave. The Lite version is bundled with LightWave 5.5, and the upgrade to the full version will add features such as Flocking & Swarming, Wind with Vortex, Arbitrary Shape Collision Detection, complete support for Friction, Multiple Color Path Keys, Force Fields, Object Substitution, and more!

Lock & Key gives animators total control over parenting in LightWave. Parent bones, objects, lights, and the camera to anything else in your scene. Even end Gimbal Lock and sliding feet forever!

IMPACT!



Particle Storm

Lock & Key

Dynamic Realities

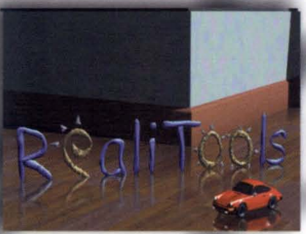
1900A Pewaukee Road Waukesha, WI 53188 USA
Main 414-549-2200 Fax 414-549-2225 Sales 800-944-5520
http://www.dynamic-realities.com

Particle Storm, IMPACT!, and Lock & Key are currently available for Intel and DEC Alpha. Dynamic Realities also publishes Stripper for LightWave and ShaderMan. Macintosh, Sun, and SGI versions are in the works! All Dynamic Realities' products are LightWave 5.0 and 5.5 compatible.

A "thank you" to John Davis of DNA Productions for providing the Santa vs. the Snowman images and logo. These images and logo are copyright DNA Productions and O Entertainment. LightWave is trademark of NewTek LLP. All other products mentioned are trademarks of their respective companies. © 1998 Dynamic Realities. All rights reserved.

LightWave 3D Plug-Ins from the Plug-In Experts.

RealiTools



RealiTools...just what every animator has been waiting for! This collection of 16 LightWave plug-ins from Dynamic Realities includes:

Soft Reflections: A shader that allows realistic blending of shadows and can change a surface's reflectivity and transparency based on the brightness of the reflection. There is also a distance falloff option. The image above is an example of this superb shader.

Lighter: One of the most advanced lighting engines for LightWave available! It allows selective inclusion and exclusion of lights, phase shifting the light, and changing the contrast of the surface's terminator. You can also have a surface transmit light (i.e. paper).

Fresnel Shader: Controls for contrast and bias, surface modifications, and value limiting give this Fresnel shader the ability to create some of the most sophisticated effects ever seen, including pen and ink effects!

Pencil Shader: This shader adds custom lines over the top of an image for that hand-drawn look.

Shadow Blend: Ease the frustrations of compositing! This plug-in eliminates the need for front-projection mapping of shadows in CGIs.

Also included: Video Lines, Video Noise, Brightness and Contrast Controls, QTVR Panorama, Ortho-VU, Front/Top/Side Views, Layout Distance Tools, Object Replacement, VistaPro Script Read/Write, Parenting, and PointString.

Both RealiTools and
Fractalizer are available for
Intel, DEC Alpha, Power
Macintosh, Sun, and SGI.

FRACTALIZER

Tired of the same old look to your objects? Well, now you can spice them up with Fractalizer from Dynamic Realities! Make dirty surfaces, electric sparks, plasma, rust, and more with this new fractal noise shader. The features include:

Five Color Spectrum: Allows easy and intuitive changing of the cloud size and the contrast between multiple colors. By applying the spectrum, you can obtain the effect of electric sparks.

Radial Falloff: Specify your effect to disappear along the radius.

Fractal Opacity: This feature makes it possible to put the fractal in a precisely defined area on the object. You can obtain many unique effects, like a burned out hole, by applying Fractal Opacity with Fractal Morphing.

Fractal Morphing: Allows obtaining the effect of a changing color or texture without tedious object-by-object morphing. The possibility of changing each parameter gives you full control over the texture morphing.

Keyframeable: All effects and controls are keyframeable for smooth morphs and gradual changes over time.

Fractalizer will give your objects a whole new look!

Dynamic Realities' plug-ins are always in stock at

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www.sharbor.com

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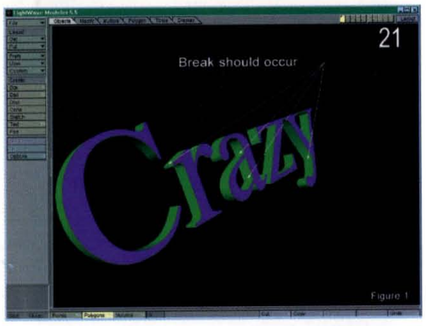

CONTENTS

ISSUE NUMBER 5

Editorial 5
LightWavin' Magazine gets acquired.

From The Front 6
News from the front line.

Liquid Metal 10
Create T2 type effects

Rantings 12
Are you getting the credit you deserve?

Review: Realitools 13

Review: Genesis VFX 16

On-Topic 18
Tackling questions from the Internet.

Getting Down To Business 20
Don't lose sight of your goals.

Tectonics 21
Adding some 'Zing' to your models.

Character Shop 24
'Work Strategies' for creating character animation.

Review: Pyromania II 26

Review: Key Pro 27

Company Profile 28
This month we feature the company behind Surface Effectors.

Review: LW 3D Plug-in Power 30

Review: Organic Modeling & Animation 31

Review: Steamer Video 32

Review: LightWave Lab Volume 2 33

Review: Leny CD-ROM Volume 2 36

Fractalizer 42
Three helpful tutorials on using Fractalizer.

Snaking Objects Along A Path 49
Conforming objects to a path.

Image Gallery 52

EDITORIAL

It's 1998! Yep, a lot happened at LightWavin' last year. Looking ahead though, it seems we're just beginning! I want to talk to you about growth. No, not the kind that comes so easily to our waist line when, after 12 hours per day of vigorous 'mousercize' at our workstation, we sneak out for a grease-burger and 32 ounce soda. No, I'm talking about the growth of a company.

Now, some of you might have deep enough pockets to bankroll the launch of your own new company. Swell... I'm guessing, though, that most are not so fortunate. When starting this magazine I, too, needed investors to supply 'venture capital.' I'd like to have avoided that. Once others are involved you're no longer sovereign - you have a board of directors to satisfy! Still, you have to admit: it does provide the cash... better to be humble-but-solvent than an impoverished mogul!

'Wooing' investors wasn't easy either. Picture yourself pitching shares in a new magazine about something called 'LightWave 3D.' Your audience? Hardheaded, bottom-line oriented business people... whose familiarity with animation is limited to 'Snow White!' While explaining the nature of 3D, I found myself constantly repeating things like - "You've seen those M&M commercials right?" References to LightWave invariably drew the response "Light-what?" Sometimes, after talking to a recalcitrant investor, I would wonder whether he might have a 'lobotomizing' neurological problem! How in hell did they make any money in the first place, let along have enough left over to invest? Anyway, by an act of God, I somehow convinced some it WAS a good idea.

We started with a 24-page magazine, which we gave out for free. Our content has more than doubled since that first issue. Yet, there's so much information appearing we could easily triple again! Growing too fast, though, can be 'A Very Bad Thing.' Otherwise-viable new businesses have failed when they ignored this fact. LightWavin' expanded, meaning we needed more people, more desks, more computers. Of course, this also meant we needed more magazine sales to stay afloat! Now we've outgrown our office space, so we moved to a larger location (we're now Suite 162, not 172). The cycle continues.

So far, so good - but what do you do when want to make a 'quantum leap?' You really want to - need to - expand, and it's going to take a LOT more capital. You don't want to spread your resources thin and risk failure. Well, you could go back to investors. Alternatively you could 'go public,' and sell stock in the company. There are other options too, and we took one of them...

Some of you may already know that, in January, LightWavin'' Magazine was acquired by DMG Publishing. That's why this issue was delayed. “Oh No!” you may be saying. “First 'LightWave Pro,' then 'VTU' went this route - just before the 'new owner' shut them down!” Yes, that DID happen, but let me assure you that this sale is a fantastic jump forward. The merger has opened the door to many new opportunities! Rather than competing, the companies involved can pool resources to get the job done, resulting in both higher quality and greater efficiency.

With combined resources far exceeding what was previously available, we can now really 'crank up the volume!' We're not just aiming to be the best LightWave magazine - no, we're shooting for 'King of the Hill!' We want to be the best 3D magazine on the market, period. Look for some major enhancements to LightWavin' in months to come, starting with the next issue.

With this acquisition, our newsstand coverage (which is already quite good) will shortly double. Before the end of 1998 we expect to have distributors in most major countries. We also intend to gradually target a more advanced LW user, though we will continue to offer articles geared to the beginner. You can continue to count on the only magazine on the market that is 100% devoted to LightWave 3D.

This month our CD-ROM contains a lot more than previous editions. There's over 300 megabytes of animation (some of these you've GOT to see!) We've also included a ton of plug-ins, patches, and demos for your mouse-clicking pleasure. I'll keep this editorial short, as we've got a lot of to cover in this issue. Until next time, keep on LightWavin'!

Manuel Coats
Publishing Director

The cover image this month is by Bill Fleming of Komodo Studio. (C)opyright 1998 Bill Fleming/Komodo Studio

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Volume 1 contains the following:

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- Making a logo appear out of a "volumetric-fog" effect.
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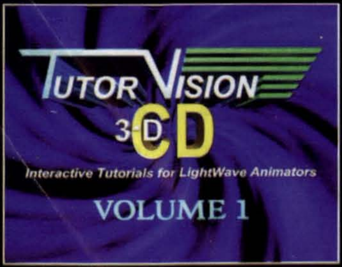
- Create a realistic explosion with still-frame image maps.

Text Tutorials

- Create a looping Fractal Noise image sequence.
- Make laser beams that look great and are easy to control.
- Work with Layers and clearly name polygon surfaces.
- Create planetary rings with the Morph function.
- Realistically light your outdoor, day-time scenes.
- Make rocket thruster exhaust that's easy to control.

Also included:

- An interview with Alan Chan from Digital Domain.
- Detailed info on many LightWave compatible products.
- Numerous images & animations from other LightWave users.
- Dozens of LightWave compatible objects and images.
- Thousands of messages from the LightWave mailing list.
- Many plugin and program demos.
- All tutorials done with LightWave 5.0



Available for PC and DEC Alpha

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Volume 2 contains the following:

Video Tutorials

- 5 HOURS of **BIG** 800x600 video clips on 2 CDs!
- Modeling a MetaMation-friendly character with MetaNurbs.
- Setting up Bones, MetaMation, and I.K. for your character.
- Animating your character: Walking and Running.
- Interacting with other objects and Picking stuff up.
- Facial Expression, Lip-Syncing, and much more!

Text Tutorials

- Using Metanurbs to create morphable character faces.
- Making character animation easier with Puppet Master.
- Cut and Paste technique for setting up bone skeletons.
- How to put clothing on your character.
- Leaving footprints in sand, dirt, or snow.
- Animating a robot with IK and seperate body parts.

Also included:

- All of the additional sections found on Volume 1.
- A completely re-designed interface, now programmed entirely with MacroMedia Director.
- "Talking-head" intros for each Video Tutorial
- A continuous-play mode that will allow users to view Video Tutorials without lifting a finger.
- All tutorials done with LightWave 5.5

Available for PC, PowerMac, and DEC Alpha

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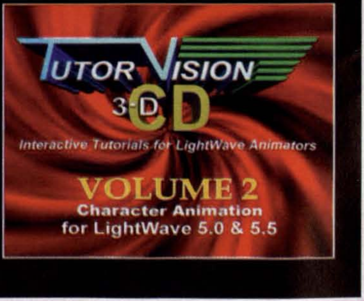

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ecommended System Configurations

C: Pentium, 16mb RAM, audio card, 4x CD-Rom, Win95/WinNT

EC Alpha: FX!32, 16mb RAM, audio card, 4x CD-Rom, WinNT

owerMac: 16mb RAM, 4x CD-Rom, System 7.5 or greater

miga: On Hold pending improvements to the Amiga hardware/software. Call for latest developments and Amiga compatibility information!

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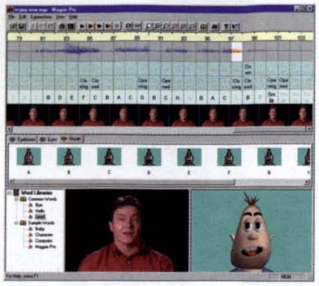
FROM THE FRONT

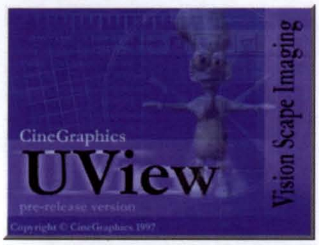
MAGPIE PRO

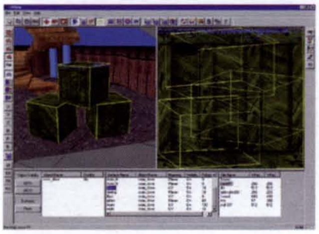


Magpie Pro, Magpie's big brother, is well under development. These are the main features Magpie Pro will have: Multiple animatable channels - Other expressions besides those related to the mouth will be supported (eyes, ears, eyebrows, etc.). The preview animation will show all the expressions assigned to a frame - Support for audio and video files (Standard .WAV and .AVI files will be supported.) - Word libraries (Word libraries will store frequently used words for easy reuse of them. It will also be possible to store actions not related to the mouth, such as an eye blink.) - Bigger previews (Previews of any size will be supported.) - Automatic Speech Recognition (A speech recognition engine based on training will be included. Once trained on an actor's voice, it will do the lipsync task automatically and with a high degree of accuracy.) - Curve editor (A curve editor will be included to provide a higher degree of control over the facial expressions. Curve information will be exported to many 3D packages that provide a "weighted morphs" capability.) - Patches to enable Magpie to run on Japanese and Chinese Windows and Dec Alphas are available. More information is available at www.thirdwish.simplenet.com/magpie.html

UVIEW

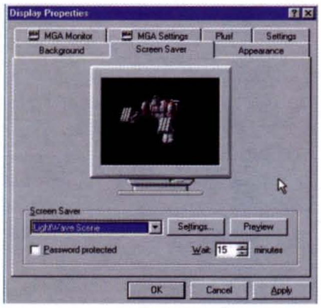
CineGraphics, in cooperation with Vision Scape Imaging, Inc., has developed a UV mapping tool for LightWave called UView. With UView, users can now texture map objects parametricly instead of the default planar, cylindrical and spherical projections. Game developers can use the UV texture coordinates in game engines and animators (with the UView Shader plugin) will be able to produce seamlessly textured objects. To see more, and download a demo version of UView, see us at www.cinegraphics.net. UView is not limited to real-time game developers. With CineGraphics' UView Shader Plugin, LightWave users can render their UV mapped objects in LightWave! Once the object has been mapped using UView, simply load it into LightWave, invoke the UView plugin and render. There is no need to load any images, because UView has already assigned them. 'UView' - Intel $199 / Alpha $259 'UView Shader Plugin' $99 Intel / $129 Alpha. CineGraphics - 2317 Falkirk Row - La Jolla, CA 92037 - 760-727-5589





SCREEN SAVER MAKER

CineGraphics also came out with a new Screen Saver. With it, you can create custom animated, shaded, OpenGL screen savers for Windows95/NT. This is great for showing off your latest animation project. You can get it from CineGraphics (http://www.cinegraphics.net) for US$59.00.

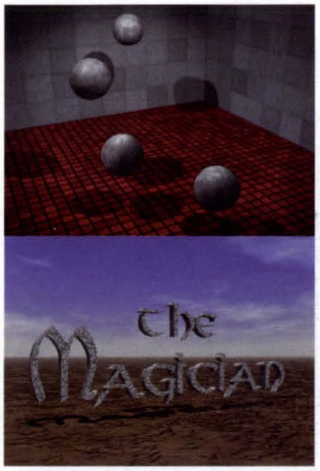


Screen Saver: LightWave Scene

☐ Password protected

Wait: 15 minutes

STARFIRE 2.0 TEXTURES



The Starfire Collection is a set of procedural texture plugins for LightWave. There are currently 8 plugins in this set: CG_Scales for textures such as lizard skin, fabrics, baskets, or other surfaces, CG_Bricks, CG_Shingles, CG_Noise, CG_Rivets, CG_Bumpy, CG_Rain and CG_Cells. The Starfire Collection plugins are available for Intel and DEC Alpha platforms, for Lightwave versions 5.0 and later. The collection includes the 8 procedural texture plugins, documentation describing the use of the plugins, and a set of sample scenes for Lightwave which demonstrate some of the uses of the plugins. The plugins are put together in a single plugin file to allow them to be loaded all at once. The price for the Starfire Collection is $49.95 when delivered electronically. Registered owners of the Starfire Collection can upgrade to the new version for $29.95. For more information, visit: http://home1.gte.net/ciric/index.htm - Advanced Media Solutions 1301-D Corporate Drive East Arlington TX 76006 Phone: 817-608-0194 Fax: 817-652-0507

I-WAR

I-WAR is a new computer game from Particle Systems Ltd. The game is very rich in artwork - and includes more than 50 minutes of animation, of which one part is a 14 minute intro. movie. All the artwork in the game - including the character animation and lip-sync was performed in LightWave. Playable demo, images and preview AVIs are available at: www.particle-systems.com/menu.htm. To save you time, we've included the 35 megs or so of demo's on the LightWavin' CD-ROM. The site has a lot of other cool stuff regarding the game, so do check it out.

MORTAL KOMBAT MYTHOLOGIES: SUB ZERO

Midway Games made both Mortal Kombat Mythologies: Sub-Zero and Mortal Kombat 4 with Lightwave. For the next project (possibly MK related) they will be using LW and motion-capture data from Kinemation. You can find out more by visiting www.mythologies.dragondata.com

SANTA VS. THE SNOWMAN

If any of you saw "Santa Vs. The Snowman" which aired on ABC in December, here's some information about the show. Produced by DNA Productions - 22 minutes of Lightwave 3D generated imagery - Shots: 367 All Lightwave CGI - Animating Time: About 2.5 months - Render Power: dedicated farm of 8-10 Carrera 533Mhz & 500Mhz Alphas - Plugins that saved the day: Particle Storm, Steamer, Puppet Master, Morph Gizmo , Gaffer and Impact! - Plugins benefited by this production: Steamer & Gizmo Renderer - Animators/Modelers/Texturists: 6 - Contracted Modelers: 4 - Technical Directors: 2 - Spiritual Leaders: 1 - Production Designs/Story Boards/Dialogue Breakdowns: 6 - TurdBall/Bottom Feeder: 1 - Some still images from "Santa Vs. The Snowman" are up at www.dnahelix.com in the

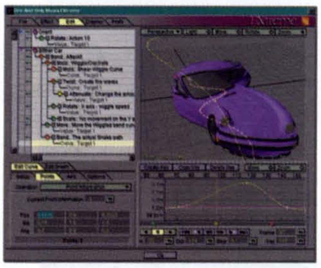
FROM THE FRONT

what's new section. Be sure to check out page two of the 'Santa vs. The Snowman' gallery!

TITANIC TRAILER

The full theatrical trailer for 'Titanic' which contains a number of LightWave 3D shots (and shots from other 3D packages) is online at www.titanicmovie.com.

FXTREME - FXTREMEPRO



FXtreme(PRO) is a powerful mesh effect generator for LightWave 3D Layout. Much more than just a simple plug-in, these tools give you the freedom to explore an infinite number of effects and actions on any object. The dynamic interface features an interactive OpenGL preview, timeline graph and hierarchical action list. The possible combination of effects is endless. FXtreme truly allows you to unleash your imagination on your animation's with some very impressive results. Tank treads and slithering, wiggly, writhing creatures are easy with FXtreme! FXtreme has a fully shaded, interactive, and animated OpenGL preview. You don't have to go back and forth between Layout and FXtreme to view any changes you make to your model. You can change your object's shape by moving points on the curves in realtime! (OpenGL update speed will vary based on the speed of your system). See the changes that you're making to your model and then make some more. You can even make changes to a particular key while the animation is playing. They've included an integrated timeline motion graph with transport controls. But not as a separate requester or panel, the graph appears directly on the FXtreme interface. Create, copy and delete keys with no fuss at all. Loop the animation within a particular range by moving the In and Out frame locators. It also has realtime scrolling and scaling, and realtime deformation updates; watch your model update in the OpenGL preview as you drag the keys or the frame locator! FXtreme avoids the usage of requesters with dynamic control areas that change the available controls based on the currently selected action list item and modes. Because FXtreme has many edit parameters, families of controls are grouped under the appropriate tabs. You'll find FXtreme's dynamic controls logically organized and very easy to navigate. With FXtreme you get 3 modules: FlexFX, XFormFX, and ControlFX. Each module contains it's own number of actions that it can perform. For example, FlexFX has Bend, Mold, Scale, Twist, and Warp actions. Other modules will be available. Suggested Retail Prices: FXtreme $350.00 / FXtremePRO $675.00 / FXtreme & MacroForm 2.0 $700.00 / FXtremePRO & MacroForm 2.0 $1025.00. One And Only Media - (908) 964-4546 e-mail: oaomedia@idt.net www.idt.net/~oaomedia

MAC UNWRAP

Ernie Wright has come out with some more fantastic plugins. The latest are: Mac Unwrap and Intel Geo Loader/Saver. You can get them on the LightWavin' CD-ROM or download them at : ftp.access.digex.net/pub/access/erniew/mac/unwrap.hqx and ftp://ftp.access.digex.net/pub/access/erniew/mac/unwrap.txt Mac Unwrap: Ernie states, "The file requester service LW provides to plug-ins displays a Load dialog, regardless of whether the plug-in needs a filename for loading or saving. On the Mac, this makes it impossible in Unwrap to save the template image to a new file, since the Mac Load dialog has no place to type the name. Thanks to Naoto Miyachi for pointing this out to me. NewTek's Matt Craig was kind enough to send me a new version of Mac Unwrap with a workaround."

INTEL GEO LOADER/SAVER

Intel Geo Loader/Saver (available on the CD-ROM or at ftp.access.digex.net/pub/access/erniew/intel/geo.zip). This is an object loader/saver for Videoscape ASCII files. Ernie writes, "It should be mostly of interest to programmers - as an example: I've provided both the source and the .p file. The wrong version of geo.p was inadvertently included in the Intel archive. My thanks to Renzo Toma for calling my attention to this." For a full list of the plug-ins on Ernie Wright's site, visit www.access.digex.net/~erniew/getstuff.html

MOTION DESIGNER 0.2

Ino, A Japanese plugin programmer has made an English interface to the very cool Motion Designer plugin. He has uploaded a more stable version on his Homepage and is distributing it now as freeware. Note that this plugin was designed for the Japanese version of LightWave, and on Japanese platforms. It should work fine with English systems, but it hasn't been tested on these platforms at all. Also note that this seems to work best with low-poly objects. Motion Designer is an object displacement program that creates a special motion file, which is then loaded into the scene (similar to Particle Storm). We've included three sample animated gifs on the CD-ROM so you can see what it can do with hair on a character. Ino has provided several Tutorials on his homepage at http://www2m.meshnet.or.jp/~ino-dx/md/index.htm, and the HTML pages have also been included on the LightWavin' CD-ROM.

DSPOTS

Several new plugins from D.J. Hudek are now available. Announcing the availability of Dspot, a procedural displacement plugin for Layout. It's something like a displacement effector, altering objects' geometry based on a number of factors specified by the user. Dspots act on an object-by-object basis, applied via Layout's Objects Panel, under the "Disp Map Plug-ins" widget. Any object, light, or camera may act as a Dspot for any object. An object may have multiple Dspots which affect it. For each, one has control over a number of parameters which determine the amount of displacement a Dspot will apply to an object at any point in time: * An item to act as a Dspot for this object * Attracts or Repels * Various displacement styles (radial, plus 4 types of parallel) * InnerRadius (may be animated) * OuterRadius (may be animated) * Raw displacement value to apply * Displacement strength falloff (none; 1/d; 1/d**2; d) * Strength modifier (none; sinusoid with specified period and phase; or animatable via control item). Dspots can be used for a variety of "fun" effects. Put a radial style attractor Dspot in the mouth of a hand-held vacuum and suck in a Buick. Put a parallel style repeller in the vicinity and fly a bird into a plate glass window (smooshing flat as it hits). Use a parallel style attractor to allow a monster to emerge from the ground as the attraction is lessened, or a giant cartoon electro-magnet to deform and attract the evil robot, or use a sinusoidal modifier on a radial Dspot and cause a tophat to beat like a heart, or use a radial style Dspot as a "forcefield" around a hero object and it can push/deform other objects out of the way as it barges its way along, or create a small hole in a high altitude jet and use an attractor Dspot to squirt people and other items out of it, or use several different styles with differing modifiers scattered about in space and deform a ship as it flies through, or or or... well, there are many combinations of parameters each with different effects. It's fun to experiment and play around. If Dspots sounds like it might be useful for you, $50 puts it in your hands. You can try out a limited time trial version (Intel and SGI platform) at www.ultranet.com/~dhudek/graphics/lw . We've also included it on

FROM THE FRONT

the LightWavin' CD-ROM. The trial version will not save or load Dspot information or apply displacement past frame 30. The associated README file has more information.

UNCLES

'Uncles' is a layout/animation plugin that procedurally alters an item's position and rotation (a "Motion Plug-in"). Uncles are somewhat similar to parents, but an item has more control over its uncles' influence (since uncles are not parents, the item doesn't have to listen to everything they say, and can modify their instructions). An item can select multiple uncles and for each, specify which of its position and/or rotation channels (x, y, z, h, p, b) to inherit and in what measure (from -5000% to +5000%). An item can have up to three different uncles for each channel, for a maximum of 18 different channel/uncle/percent combinations. Minimum is one uncle only affecting one channel. Note: Version 1.1 is now available. In response to user requests, the ability to delay an uncle's influence by a specified number of frames has been added. This can be useful for creating follow-the-leader type behavior. Note that at present only uncles which are not simultaneously nephews may have their influence offset by a delay. The plugin is available on either the Intel or SGI platform for the price of $30 (US). If you think it might be useful, you can download a limited time trial version at www.ultranet.com/~dhudek/graphics/lw/uncles.html or get it right off the LightWavin' CD-ROM.

AUNTS

Aunts is a layout/animation plugin that procedurally alters an item's position and rotation (a "Motion Plug-in"). The aunts plugin is similar to uncles, but with more dynamic control over inheritance (at a cost of more complex scene setup). While Uncle/nephew relationships are stable over time (fixed percentage), Aunt/niece relationships are more mercurial — the inheritance percentage can vary dynamically over time. As with uncles, an item can select multiple aunts and for each, specify which of its position and/or rotation channels (x, y, z, h, p, b) to inherit and in what measure. Unlike Uncles with its simple percentage control, Aunts offers the ability to change the percentage over time, by use of a flexible control item scheme. In addition, while Uncles offers inheritance of channel values based on relative changes from frame 0, Aunts offers a choice of using either relative or absolute values. A niece can have up to three different Aunts for each channel, for a maximum of 18 different channel/Aunt/percent combinations. Minimum is one Aunt only affecting one channel. The plugin is available on either the Intel or SGI platform for the introductory price of $30 (US).

POINTFOLIO

Pointfolio is a plugin that assists the point selection process in LightWave Modeler. It allows one to create arbitrary named collections of points and progressively build them into larger and more complex named collections by means of Union, Intersection and Filter operations. It was motivated by a number of posts to the LightWave mailing list which wished for the ability to select points by arbitrary groups, other than via associated surface naming. The plugin is available on the Intel platform for $20 (US). It works with LightWave 5.0 and 5.5. If you think it might be useful, you can download a limited time trial version at www.ultranet.com/~dhudek/graphics/lw/pfolio.html or get it off of the LightWavin' CD-ROM. Order any of the above by sending payment to D.J. Hudek - 17 Bruce St. - Grafton, MA 01519

FLARE MASTER

FlareMaster Lite is a plugin for Modeler (LW 5.0x) to create scenes with flares based on the points position in the active layers. Features: Random Flare Intensity - Random Rotation Angle - Random Star Filter - All Flares parented to a Null. FlareMaster Pro has the same features of FlareMaster Lite plus: Nulls - Parent all flares to a Null - Add a Null every time X, Y or Z increments - Add a Null every "n" Flares - Do not add a Master Null - Master Null name - Child Null Name - plus lots of color and envelope controls. FlareMasterPro is for LW 5.5 and will not work in previous versions of LightWave.

LIGHTSCAPE TRANSLATOR PLUG-INS

Lightscape Technologies Announces Lightscape Translator Plug-ins for LightWave 3D. The Lightscape Translator Plug-ins enable direct two-way translation of data between LightWave 3D and Lightscape 3.1. The translation tools allow LightWave 3D users to take advantage of Lightscape's realistic radiosity rendering capabilities. Once the results of Lightscape's radiosity process are imported into LightWave 3D, additional animated effects and objects can be integrated into the 3D scene and illuminated using LightWave 3D. The combined approach provides the benefits of both rendering techniques, allowing fully animated scenes to be produced with a level of realism not previously possible. Lightscape is the first advanced visualization and lighting application offering radiosity technology combined with an integrated ray tracer and physically based lighting. The radiosity technology produces subtle yet significant lighting effects not obtainable with conventional rendering technologies. These effects include direct and indirect diffuse lighting, soft shadows and color bleeding between surfaces. The Lightscape Translator Plug-ins for LightWave 3D are available free of charge to registered Lightscape customers and can be downloaded from the Lightscape Web site at www.lightscape.com/. For additional information on Lightscape, send e-mail to info@lightscape.com or call (408) 342-1900.

LIGHTSCAPE - LIGHTWAVE

Speaking of Lightscape, James G. Jones from Pixel Systems has put together a web page that shows examples of using LightWave with Lightscape and their new translator plug-ins. It's a collection of images showing different aspects of lighting, direct and indirect, and the contribution of the radiosity from Lightscape. Point your browser to www.pixelsys.com.

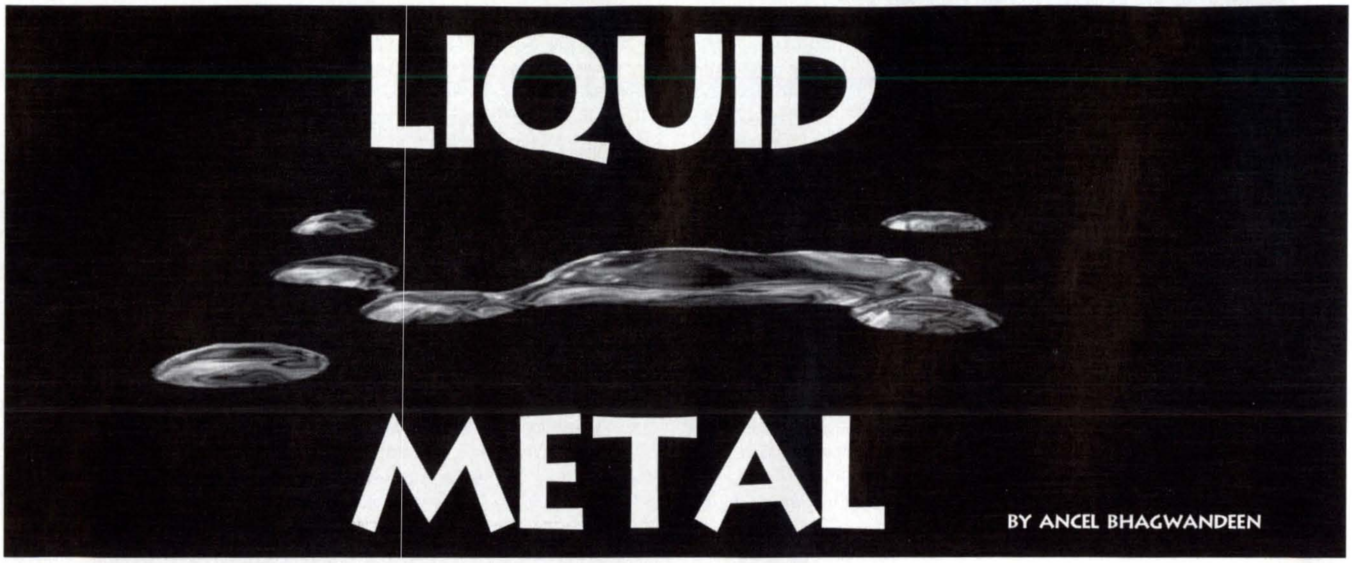
NEW PLUGINS AND MAC PATCH

Visit NewTek at www.newtek.com/tech/tech.html for the following patches and plugin updates (All files are included on the LightWavin' CD-ROM under 'NewTek-Updates')- New version of Steamer (Improved interfacing between Steamer and Particle Storm - displacement parameters duplicated properly when a "Steamer" object is cloned - envelopes now function properly for all "Steamer" parameters.) - New version of Morph Gizmo (new Gizmo Render plugin will allow Gizmo to render across ScreamerNet without any problems.) - The FINAL patch for the Mac 5.0 is now available. This patch contains everything that all previous patches include so this should be the only patch you ever need to download for 5.0. This latest version fixes: Object Dissolve envelope bug - can now add Mac type 1 fonts from the Macintosh fonts folder. Plugins added: ds_PCS - ds_TIFF - ds_RLA - objlist - objrep - apatchmk - imlist - layerset - lazygui - lwpanels - negative - spherize - vidfilt. This will take care of all known major bugs and missing plugins. The remaining couple of plugins that are not available for Mac but are for Intel will not be added due to the fact that they use the HIIP drivers which will not work on the Macintosh.

QV UPDATE

There's a bug in the March 1997 release of QV, the one on the LW 5.5 CD. To get the latest version, posted October 19, 1997, get it off of the LightWavin' CD-ROM or visit one of the following sites: www.access.digex.net/~erniew/getstuff.html - ftp.access.digex.net/pub/access/erniew/intel/qv.zip (Intel) - ftp.access.digex.net/pub/access/erniew/alpha/qv.zip (Alpha). To see whether you need this, read on. QV needs to read LightWave's configuration file, lw.cfg, to determine what image saver plug-ins are available. Beginning with LightWave 5.5, lw.cfg became harder to find. It might be in the same directory as the program itself, as before, but it can also reside in the user's profile directory or in the working directory set when the program is launched. March 97 QV doesn't look for lw.cfg in the new locations, and it crashes while saving an image whenever lw.cfg hasn't been found. You can tell whether this affects you by hitting the Save button and looking at the Files of Type dropdown list on the file dialog. If nothing is listed there, QV

(Continued on page 22)



LIQUID METAL

BY ANCEL BHAGWANDEEN

LightWave does not yet support animatable metaballs. This makes for some innovative approaches whenever a client asks for the "liquid metal morphing effect." This tutorial is based on an animation created to meet this exact request from the neighborhood McCann Erickson Agency (for a rum, by the Angostura Bitters people) commercial. The technique is quite simple. The whole thing can be done in a couple of hours, once you know how. The great thing about this approach is that Wavers' using any version from 3.0 on can do it! For those of you who like to develop animations based on ideas, I present the principles next. For those who can't spare the production time to twiddle animations, the details follow.

The Smooth Principle

The real problem is to get the "liquid" globules to flow together, and behave cohesively. You know what I mean - seamless joining and separating, while appearing to maintain constant volume. From a physical point of view, the visibility of translucent objects is additive when they are overlaid. So, if you have 2D discs with a radial transparency falloff to the center (soft edged white dots) animated to clump together, you can simulate liquid joining or separating. The intensity of the white discs builds seamlessly as the semi-transparent discs overlap.

Once an animation of these discs is rendered, it can be used as a displacement map on the actual object to be formed by this process. This object should be nearly flat, and polygon tripled for best effect. For objects that are not flat, you will have to do a normal MTSE morph between morph targets during the displacement mapping sequence to achieve the desired result.

Okay, details follow - those of you with a few moments can try this now or read on.

The Discs

To setup the animation of the semitransparent discs, we need to create a disc object, and an image map for the radial transparency falloff. Create the image map in PhotoShop (or your paint package) using an image size of 200 by 200 pixels. I chose this size based on the expected size of the globules I wanted, and the expected detail of smoothness in the displacement. Using the gradient tool (radial option, 100% opacity) make a black dot falling-off to the white background. I increased the contrast of my map by about a value of 10% to be certain of a solid black core in the map center. This core of black will become the 'always visible' top of a globule. The fall off to white represents the side curvature of a globule. Convert this file to a grayscale one and save it as SPOT.IFF in the images/brushes directory/ folder.

Make a flat 1-polygon disc in Modeler on the z axis about 500 mm diameter, name its surface "softdot" and export it to Layout as "DISC." Make 8 clones of the disc in the Objects panel. Texture the softdot surface with a planar transparency map using the SPOT.IFF image, z-axis, and auto size the map. Exit this panel. Before you finish surfacing, set the surface color of the disc to be pure white and 120% luminous.

Set up an animation like this: Place 1 disc in the center of the layout camera view and size it larger - say 1.5 times. This will be the core globule. Then place the other eight at various points off screen. Give each a straight motion path, so that it ends overlapping the big disc. The animation should be about 225 frames long. Each motion path should be of different time lengths (90 frames is a good base figure) and have assorted starting frames to add variety. Each disc should be slightly offset in the Z-axis to prevent co-planar polygon problems. Shift them 10 mm each, so the first one is 10mm, the second 20mm, etc. The camera position should be around -2.3m on the Z-axis. The 8 outer discs should be set up to move inward from all directions so, when they come to rest, a large portion of the screen is filled with white. This is important for the volumetric consistency which liquids display. Note the images - Figure 1 (first frame) and figure 2 (disc clumping).

One other consideration: for liquid realism, the discs should not come to rest all at once. If your animation is 225 frames long (like mine) and each disc has a motion length of around 90 frames, create another key 15 frames later for each disc at the same end position. This allows a little bounce at the end of the disc motion. Look at the motion graph or do a preview. This bounce helps with the realism. Conservation of energy is important here.

Kinetic energy of the globules is given up to the cohesiveness of the liquid, thus the bounce, and of course some rippling. Ripples are applied in the final segment of the animation.

We need to fill up the darker gaps formed between the discs when they come to rest to simulate proper formation of the final object. To accomplish this, I made the larger central disc start to grow to fill the screen after about 5 of the 8 discs had come to rest. This started at frame 120 and ended at 225. You can vary this to suit your timing. In my animation I also set up a 'limited area' render of 540 by 480, instead of 720 by 480 pixels. This was because my final object was a beveled square with a center button. It made the displacement mapping simpler to size.

Render this animation with no antialiasing & medium resolution (it won't take long). Hopefully you're using some sort of playback hardware like a Perception VR. Otherwise, render it as IFF or JPEG files to your storage hard disc.

The Smooth Zone

Now we need to apply this image sequence as a displacement map to the final object. My object was quite simple, a 600 mm square. It was 'stagger beveled' on the sides, for a rounded bevel appearance, and made up of 40 segments in the x and y axis. The total polygon count after tripling was 5056. The count is high because of the segmentation necessary for smooth displacement mapping. As well, the object had extra detail to morph from a flat, beveled metal square to one with a sunken push-button. As you know, the point count between morph targets MUST be the same. See figure 3 for the final object.

For your purposes, just make a box with the following dimensions: 600 mm on the x-axis, 600 mm y-axis, 0 mm z-axis, with 1 segment for x, y and z. Center the polygon, select it and bevel it using 10mm inset and 10mm shift. While the polygon is still selected, bevel it again. Do this again, but change the bevel to 5mm inset and 5mm shift. This gives a simple beveled square. Now julienne (custom script) both the x and y axis, slicing for 50 segments both ways. Finally, triple the polygons (polygon menu). The object should have 6,184 polygons.

Name the surface "METAL," and export the object as "METALSQR" to a new layout. Target the camera to it, and move the camera to x=0, y= -1m, z= -50cm. The object should appear tilted away from the camera. Texture the METAL surface with your favorite metallic texture. I created a custom one using a "silver" image map from the Light-ROM 3 CD as the 70% spherical reflection map.

I used a black "Floor" object (2.5m x axis, 2.5m y axis and centered on z-axis) as the commercial called for black & silver. You can use whichever color or texture you like on the floor object. This Floor object is just a big black square at -11.2 cm on the z-axis, x and y being 0. From the TOP view (XZ) you should see this square object edge a few cm in front of the METALSQR object.

Next, the rendered disc image sequence is applied as a displacement map to the z-axis of the METALSQR object. I used a texture size of x= 1m, y=70 cm, z=2.5cm. Texture center: x=0, y=0, z=-1.25cm, with an amplitude of .1. If you render frame 90 you should see some of the globules as they traverse to the center of the object. If you render the last frame 225 the METALSQR object should look whole. The Floor object can be moved on the Z-axis to make the globules appear either thinner or taller. You will have to do this, since the image map created in the beginning won't be

(Continued on page 39)

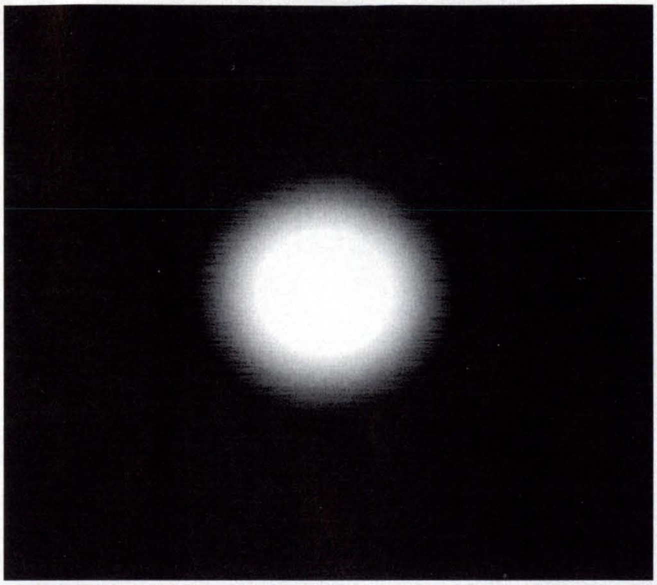


Figure 1

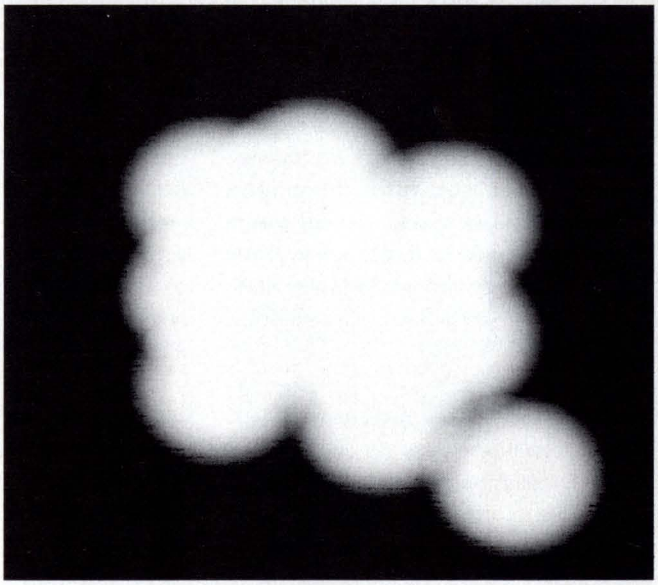


Figure 2

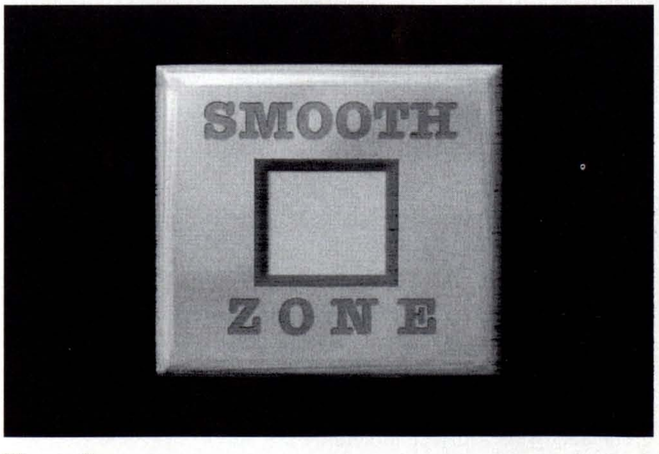


Figure 3

RANTINGS !

A No-Holds-Barred LightWave Column

by Emile Smith

Credit where credit is due

So there you are. You've done your best work to date. You think it looks outstanding. It was hard, and you busted your ass to get it done and make it look good. You sit back, relax, enjoy the crisp cool air, putting all the long hours you spent sitting in front of your computer, and the all-nighters out of your head. You've received the check. Nothing can go wrong, and everyone is finally satisfied. You head out to go see your work on display when, lo and behold, you've been screwed in the credits!

I'm talking about getting credit for your work. Sure, it's great when you get paid for your work - for many people that's all that really matters. For most of us, though, much of what we're doing comes down to artistic integrity, and probably a small amount of ego. We're artists! We like to get recognition when we've given a large part of ourselves to a creation. When you're part of a group working on a project, you want everyone involved to be given their due respect (especially if it is something relatively high profile).

This applies to movies, books, television, exhibits, etc. If an author quotes someone in a book, they give the originator credit. When someone acts in a film, they get credit. When you have a piece of artwork on display at a gallery, you get credit. Some argue 'you've been paid and that's all that really matters, so shut up and be happy!' In our profession credit really does matter though. First, for valid business reasons: people notice your name on something and, if they like it they may hire you to do something for them (it could also stink, saving someone from hiring you!) Second, it's human nature to want to be recognized for your accomplishments.

"Superstar 'Kalamazuka' comes running down the corridor. She turns her head to look down the dimly lit hall, and sees the creature loping towards her with tremendous speed! She's frozen in panic. Just as she's certain her life is about to end... it stops! It looks at her, with a deep air of curiosity. It slowly reaches out, and caresses her face. It 'smiles,' then runs off past her, to the darkened recesses of the long corridor!"

If the above was a scene from a movie or television show, the creature would be a major character - especially if the story were built around it. At the end of the movie you might sit there watching the credits, wondering who had created it. Maybe it was an individual who did everything, or perhaps it was a group. Sometimes people are credited. Sometimes they aren't. At times a company will be named. Other times the company AND the individual(s) involved will be given credit. All too often no-one is. One way of looking at this is that, if the actor is getting credit, why shouldn't the animator(s) who made the creature? 'It' is just as much a lead character as the actor. The animator has supplied just as much creative instinct, idiosyncratic behavior, and charisma as an actor might have put into a role. Why shouldn't the animator be given at least some kind of credit for their work?

This specific question and related dilemmas are coming more and more into play as CGI characters 'come alive.' It's going to become a major issue soon as even lead characters are animated, interacting just as a live actor would - talking, laughing, etc., with other live, or animated characters.

When you go to a film and watch the credits scroll by you see hundreds of names: the actors, writers, producers, editors, caterers, drivers, and production assistants. These are all people deserving the credit they have gotten. Yet why does the truck driver or the caterer get credit, while the people doing the special effects get their names nixed at the last moment, just because someone decided the credit list was too long. Often, this has to do with various union contracts; they have to get credit, and that's just the way it is. Not that they shouldn't be given recognition. Yet, obviously, animators and modelers who may have supplied the focal point and key character of a story should also be honored on a personal basis. Would anyone ever think of denying Eric Stoltz credit just because he wasn't the main character in movie?

Whether the reason is legal-ese or laziness, the failure to give credit where due is just plain wrong-headed. It's high time firms and individuals responsible on both sides (creators and beneficiaries) had it out. Respect and recognition are 'past due' to those whose creativity and artistry play a huge role in todays entertainment.

Emile Edwin Smith is currently an animator at Foundation Imaging working on many different projects. You can try to tear apart his world or humiliate him by dropping him a note at : emile@foundation-i.com

PRODUCT REVIEW

REALITOOLS

By Dave Thomas

Realitools is a collection of different plug-ins for LightWave. At first glance it might seem like a collection of simple utilities, but there's quite a bit of depth to some of the routines. The program installs normally, and gives you a pre-activation code. You have two weeks to get an activation code from Dynamic Realities before the plug-ins stop working. There are a variety of ways to obtain your code, including filling out a form on their web site (perfect for people like me who insist on working when everyone else is asleep). The installation of the program includes the documentation and example files. Yes, all the documentation for the program is on-line. I have no problem with on-line documentation, but there are those who don't like it, so I'm mentioning it to warn you.

One For Modeler

The package comes with one plug-in for Modeler, Pointstring. This plug-in will let you connect a group of points with two point polygons, just by selecting all the points in order and then running the plug-in. It is a perfect way for making things like lightning bolts or hair strands. While it's not the most exciting plug-in ever written, it is a time saver, and certainly preferable to the manual method.

How Near Is Far?

The rest of the plug-ins in Realitools all work in Layout. The first set we'll take a look at are utilities to make your work in LightWave a bit easier. There are three plug-ins that can be used as measuring tools. By running one of these plug-ins, you can measure the distance between the camera and an object, a light and an object, or between two objects. The plug-in will display the distance between the two selected items, as well as showing the difference between the two on the X, Y, and Z-axis. By adjusting a slider, you can check the distance over the course of an animation, or move to check any frame. This is a handy utility for checking exact item placement. It's also good for calculating something like fog distance (which I never get right on the first try).

In and Out (Sort of...)

The package also includes plug-ins that will translate Vista Pro 4.0 Camera Motion files to a LightWave motion file, and the reverse. The use of the latter is a bit suspect - the programmer admits that he wrote the plug-in before he realized that he had no idea how to get Vista Pro to recognize the data.

(Continued on Page 38)

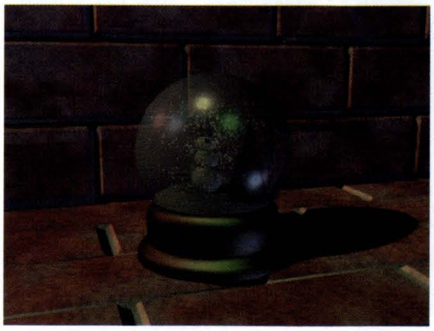


fIGURE 1 - Normal image

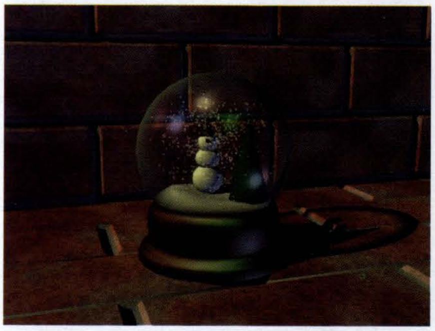


figure 2 - Same image with Soft Reflections turned on

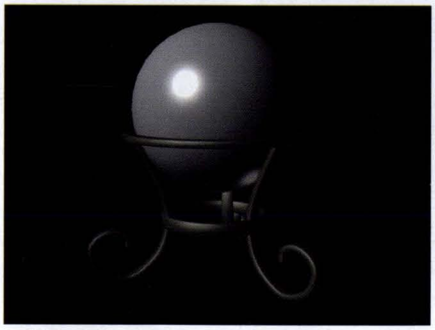


fIGURE 3 - A normal image

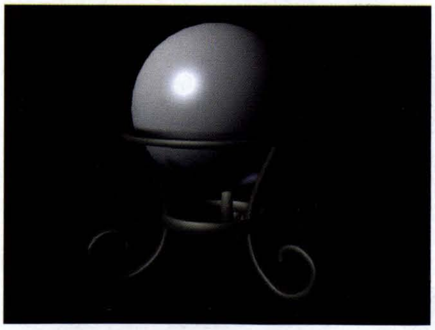
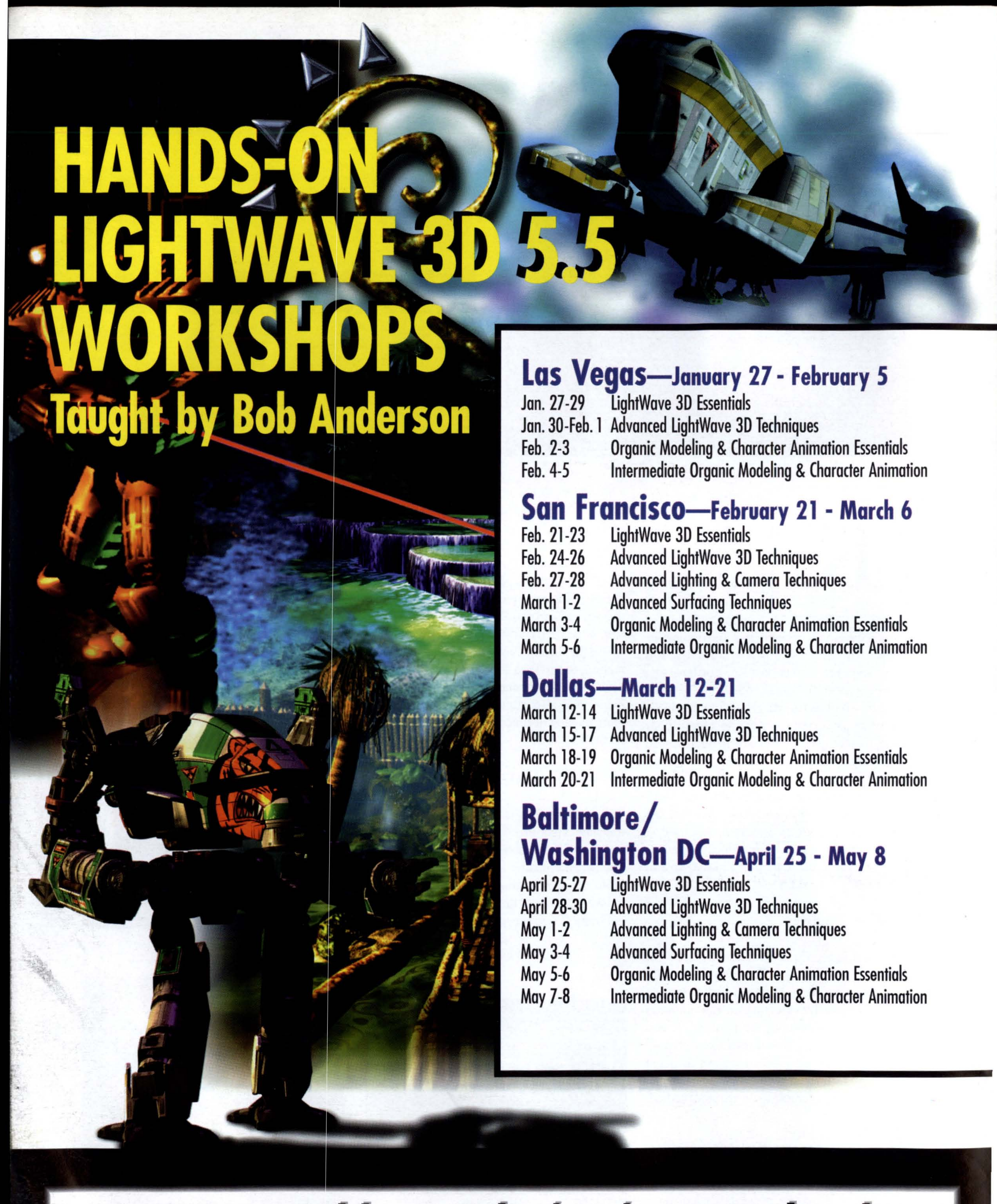


figure 4 - The same image as figure 3 with Fresnel Reflections, Soft Reflections and Lighter in use



HANDS-ON LIGHTWAVE 3D 5.5 WORKSHOPS

Taught by Bob Anderson

Las Vegas—January 27 - February 5

Jan. 27-29	LightWave 3D Essentials
Jan. 30-Feb. 1	Advanced LightWave 3D Techniques
Feb. 2-3	Organic Modeling & Character Animation Essentials
Feb. 4-5	Intermediate Organic Modeling & Character Animation

San Francisco—February 21 - March 6

Feb. 21-23	LightWave 3D Essentials
Feb. 24-26	Advanced LightWave 3D Techniques
Feb. 27-28	Advanced Lighting & Camera Techniques
March 1-2	Advanced Surfacing Techniques
March 3-4	Organic Modeling & Character Animation Essentials
March 5-6	Intermediate Organic Modeling & Character Animation

Dallas—March 12-21

March 12-14	LightWave 3D Essentials
March 15-17	Advanced LightWave 3D Techniques
March 18-19	Organic Modeling & Character Animation Essentials
March 20-21	Intermediate Organic Modeling & Character Animation

Baltimore/ Washington DC—April 25 - May 8

April 25-27	LightWave 3D Essentials
April 28-30	Advanced LightWave 3D Techniques
May 1-2	Advanced Lighting & Camera Techniques
May 3-4	Advanced Surfacing Techniques
May 5-6	Organic Modeling & Character Animation Essentials
May 7-8	Intermediate Organic Modeling & Character Animation

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1998 Schedule

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June 8-10	Advanced LightWave 3D Techniques
June 11-12	Organic Modeling & Character Animation Essentials
June 13-14	Intermediate Organic Modeling & Character Animation

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**Open only to high school & college teachers & students at a special discount.*

July 18-20	LightWave 3D Essentials
July 21-23	Advanced LightWave 3D Techniques
July 24-25	Organic Modeling & Character Animation Essentials

Minneapolis—August 1-10

August 1-3	LightWave 3D Essentials
August 4-6	Advanced LightWave 3D Techniques
August 7-8	Advanced Lighting & Camera Techniques
August 9-10	Advanced Surfacing Techniques

Topeka—September 19-26

Sept. 19-21	LightWave 3D Essentials
Sept. 22-24	Advanced LightWave 3D Techniques
Sept. 25-26	Organic Modeling & Character Animation Essentials

Atlanta—November 7-20

Nov. 7-9	LightWave 3D Essentials
Nov. 10-12	Advanced LightWave 3D Techniques
Nov. 13-14	Advanced Lighting & Camera Techniques
Nov. 15-16	Advanced Surfacing Techniques
Nov. 17-18	Organic Modeling & Character Animation Essentials
Nov. 19-20	Intermediate Organic Modeling & Character Animation

About Your Instructor

Who better to teach you how to take advantage of all the powerful features of LightWave 3D than someone who trained LightWave users for NewTek for over five years? Bob Anderson is a former manager of NewTek's Technical Support and former Desktop Video Product Manager. You may have read Bob's columns in various television trade magazines or seen his seminars in the past. Now you have the opportunity to learn hands-on how to perform the techniques that Bob will teach you in these intensive workshops.

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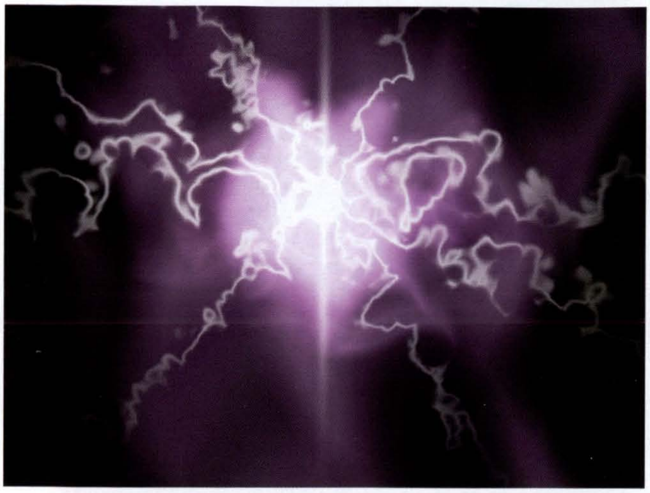
PRODUCT REVIEW



Genesis vfx

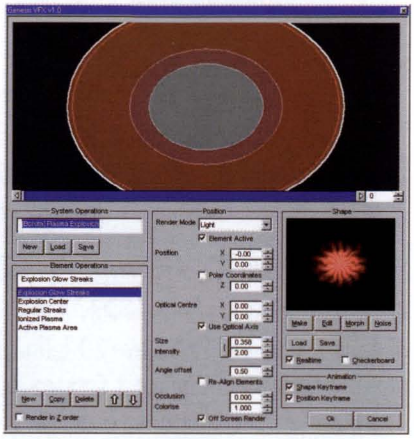
By Dave Thomas

Remember when lens flares were added to LightWave, way back in version 3.0? While they were overused for a while, the addition of this feature allowed the LightWave animator to create many new effects not possible in previous versions. Still, while the lens effects in LightWave are powerful, they do have some limitations. For those who have been looking for more 'optical effects' power, your search is over. Genesis VFX is a new plug-in for LightWave 3D that lets you create all sorts of interesting special effects. Besides more powerful flare options, this plug-in lets you create all sorts of interesting glows, highlights, explosions, and many other exciting effects.

The package is installed the normal way, and will require an activation code before you can use it. Once you get the code from the developer (e-mail seems to be the most convenient way), the program will operate. While I understand the need for copy protection, it would be nice if the plug-in would operate for a week or so while you're waiting for the code, like most other plug-ins do. In defense of the company, I should mention that they got the activation code back to me very quickly (a couple of hours), so I suppose this is just a minor annoyance.

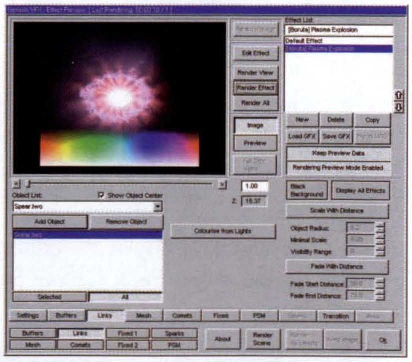
When you launch the plug-in, you'll see the large number of buttons and options that are available. The interface may look overwhelming at first. While it does take a little while to get used to the program, it's not too difficult to use. As you become more familiar with it you'll appreciate the wide number of features available. A large part of the main screen is taken up with the preview window. I found the preview update to be pretty quick, even with fairly complex effects.

So how does GVFX work? The program uses Effect (GFX) files. Each Effect is made up of one or more Elements. Each

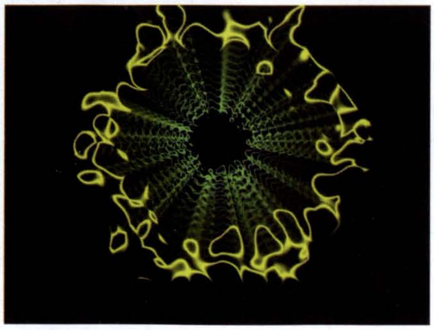

Genesis VFX v1.0
System Operations
[Boruta] Plasma Explosion
New
Load
Save
Element Operations
Explosion Glow Streaks
Explosion Glow Streaks
Explosion Center
Regular Streaks
Ionized Plasma
Active Plasma Area
New
Copy
Delete
⇧
⇩
Position
Shape
Make
Edit
Morph
Noise
Load
Save
Animation
Ok
Cancel

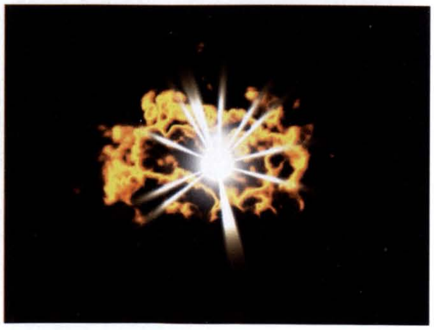
Render Mode: Light
☑ Element Active
Position X: -0.00
Y: 0.00
☐ Polar Coordinates
Z: 0.00
Optical Centre X: 0.00
Y: 0.00
☑ Use Optical Axis
Size: 0.358
Intensity: 2.00
Angle offset: 0.50
☐ Re-Align Elements
Occlusion: 0.000
Colorise: 1.000
☑ Off Screen Render
☐ Render in Z order
☑ Realtime
☐ Checkerboard
☑ Shape Keyframe
☑ Position Keyframe

Shots of the interface.


Effect List
Edit Effect
Render View
Render Effect
Render All
Image
Preview
New
Delete
Copy
Load GFX
Save GFX
Keep Preview Data
Rendering Preview Mode Enabled
Black Background
Display All Effects
Scale With Distance
Add Object
Remove Object
Colourise from Lights
Fade With Distance
Selected
All
Settings
Buffers
Links
Mesh
Comets
Fixed
PSM
Transition
Buffers
Links
Fixed 1
Sparks
Mesh
Comets
Fixed 2
PSM
About
Render Scene
Ok

[Boruta] Plasma Explosion
Default Effect
Object List: Spear.lwo
☑ Show Object Center
1.00
Z: 16.37
Object Radius:
Minimal Scale:
Visibility Range:
Fade Start Distance:
Fade End Distance:





Some effects created with Genesis VFX from Positron Publishing.

Element has a Shape that can be edited and defined. Parameters like color, width and so on, can be adjusted. Elements can be set to affect an image like light, or perform functions like tint, negative, add or subtract colors, even warp or displace the image. The Elements of an Effect can be easily re-ordered, positioned, and can occlude on another, allowing you to set up the Effect just the way you want. There are real-time previews available while working on each Element, which makes it easy to see your work as you edit it.

> **Genesis VFX is an amazing program. It allows you to easily create effects that you've never seen before in LightWave.**

After creating an Effect, you need to assign it to something in your scene. Effects can be assigned to lights, objects and particles (the program supports both Sparks and Particle Storm particles). Effects can render behind objects, and they can be rendered in Z-buffer order or by user-defined order. The plug-in can also control the anti-aliasing and motion blur of each Effect. The ability to combine Elements into Effects is powerful, but the ability to layer multiple Effects into a shot is just as impressive. You can get some very interesting results with these layering capabilities. It's fun to experiment, combining different effects to see what happens.

Effects can also be animated. Key frames can be set for each Element parameter, and the program will smoothly move between them. Also, Element parameters can morph between different settings over time, even adding noise functions to different parameters for a more random looking effect. All sorts of wild effects can be created in this manner.

Besides using the program to create flares and explosions, there are some other interesting applications. The program offers a mode called Comets, which lets you create effects like glowing animated trails, with complete control over the length and life of the trail. The program also allows access to the Buffers in LightWave, which are especially handy for creating glow effects. Genesis VFX lets you use Effects to create transitions between images. This is a really interesting feature, since it's like having a video transition box inside LightWave, with the ability to create transitions like you've never seen before.

Once you have an effect set up the way you like it, you can save it as a GFX file. Besides being able to use it again later, you can also use any GFX files in the other versions of Genesis VFX! Currently there are versions for Adobe PhotoShop and Kinetix 3D Studio Max, with an Adobe Premiere version under development. Any GFX file created in the other versions can also be used in LightWave. This is a great feature, making it easy to share a library of files without annoying conversion processes, as well as providing an even greater number of available effects.

If there is a drawback to the program, it is the manual. It does a good job of explaining the various functions of the program, but it needs to have some more depth. Many of the function descriptions are just too short. Also, while there are a couple of tutorials that will help you get started, more would be welcome. To be fair, I should mention that I was working with a preliminary version of the documentation, so perhaps the final manual will be longer. On the plus side, the company maintains a web site where they have a bunch of new GFX files that you can download, as well as some additional tutorials. I also found the technical support staff to be very helpful. They answered all questions quickly and accurately, which is sadly somewhat of a rarity in the computer software field.

Genesis VFX is an amazing program. It allows you to easily create effects that you've never seen before in LightWave. There's a ton of depth to the package, so the more you use it, the more interesting effects you develop. The ability to combine many different Elements into one Effect allows for almost unlimited creativity. I've been using the program for over a month, and am still finding interesting new combinations. It'll take you a bit of time to get used to all the controls, but once you do you'll begin to appreciate the power of this program. I place Genesis VFX in the small category of "must have" plug-ins for LightWave. It's that good.

Positron Publishing
Genesis VFX
Intel $419.95 / Alpha $469.95
2605 South 156th Circle
Omaha, Ne. 68130
www.3dgraphics.com

On-Topic

Questions and Answers from the LightWave Mailing List

by David Warner

Fast and furious happenings continue in the LightWave world! Since the last issue we were treated to the NewTek Expo; a patch for LightWave 5.5 has been released; a number of excellent new plug-ins are available; and LightWave continues to make waves in Hollywood!

LightWave 5.5 had a few rough edges when it was first released in late June. However, the first update patch was made available November 18th, and the program has taken another step in the right direction. With a number of important bug fixes and updated plug-ins, LightWave 5.5 can now be considered a "must-have" for any serious LightWave animator. The version 5.5c patch can be found on the NewTek web or FTP sites.

As LightWave continues to mature, the abundance of excellent commercial plug-ins grows and grows. Among these are 'FXtreme,' by One and Only Media; 'Relativity,' by Prem Subrahmanyam; 'RealiTools.' by Dynamic Realities; and 'Motion Pack,' from NewTek itself. These newly released plug-ins add some amazing new features to LightWave and I recommend that every 'Waver' check them out soon. They're VERY cool!

Undeniably, LightWave has already established a strong presence in Hollywood - but even the most enthusiastic LightWave fanatic must be amazed by the profusion of movies, TV shows, and commercials now making extensive use of LightWave in their production. As recently as a year or two ago we would get excited every time we heard that LightWave was being used for some major project in Hollywood. Now there are too many "LightWave sightings" to begin to keep track of!

A statement from the NewTek Expo that deeply impressed me is that "LightWave is now the backdoor into Hollywood." What does this mean? Quite simply, if you have a desire to work in Hollywood, and if you put the time and effort into becoming proficient with LightWave, then there are VERY good odds that you will get a job working on some exciting projects for movies or television. There is a desperate need for talented LightWave animators in Hollywood right now - if you're good enough, YOU could be seeing your name in the closing credits of something big very soon!

Now (to help you become a better LightWave animator!) here are some questions and answers from the LightWave mailing list:

Q: I've installed the LightWave 5.5c patch and I'm having some new problems. Why is this and what can I do to fix them?

A: Some people have reported new problems after installing the LightWave 5.5c patch that was released on November 18th. Here are some tips to solve these problems -

First, make a backup copy of your entire NewTek\Programs\ directory before running the version 5.5c patch! This will ensure that you have a fully functional backup of LightWave to fall back on if anything does go wrong during or after the installation. The patch installation program backs up your LightWave executables, but overwrites the important support files that go with the executables. Getting these back can be a real pain in some situations.

Once you've successfully run the patch installer, you may notice that the Morph Gizmo, Steamer, and Skytracer plug-ins crash when you try to access them. The most common explanation for this crash is the failure to have the 'Use OpenGL' option selected in the Options/Layout View panel. Just re-activate this option and these plug-ins should work correctly again. If not, then try re-adding the plug-ins. It's especially important that you do this for Steamer! The Steamer.p plug-in file contains a new Steamer_Doubler plug-in that will not be accessible unless you re-add the plug-in. Be sure to check NewTek's web site for updated Steamer documentation too!

If Modeler reports an "Error 213" when you try to run it, this refers to a problem with the 'Regional Settings' in the Windows control panel. You can change your settings to "North America" and this should fix the problem, or you can simply run Modeler from the Layout interface itself. A better solution may be available from NewTek by the time you read this.

A minor save problem was reported with the QV viewer plug-in. A few days later, Ernie Wright (author of QV) released version 2.03, which fixed this problem. You can download the update from:

http://www.access.digex.net/~erniew/getstuff.html

ftp://ftp.access.digex.net/pub/access/erniew/intel/qv.zip (Intel)

ftp://ftp.access.digex.net/pub/access/erniew/alpha/qv.zip (Alpha)

Please note that NewTek's web site (http://www.newtek.com) and FTP site (ftp://ftp.newtek.com) should be checked for new file patches before applying any of the above mentioned solutions.

Q: I've applied the Jitter Motion plug-in to my object and now my object stretches uncontrollably, even though I haven't resized the Jitter Motion control null object. How do I fix this?

A: The default size for any control null object is 1,1,1 on the x, y, and z axis... this applies a jitter strength of 1 to all axis of your object's scale factor. The solution is to scale the control null object down to 0,0,0 on all axis. (This same solution applies to some other plug-ins that use control null objects to influence their effects on the target object.)

Q: I'm trying to access the files in the Online Docs section of my LightWave 5.5 CD-ROM but my web browser is having problems. What's wrong?

A: The LightWave 5.5 Online Docs must be installed on your hard drive before you can access them. This is because most of the files are either compressed or saved with truncated filenames. The easiest way to get everything uncompressed and named correctly is to run the LightWave 5.5 installer. Only select the Online Docs from the list of things that you want to be installed. Once the installation is complete your web browser should be able to access these files without incident.

Q: Whenever I try to use Skytracer the interface shows a black screen, even though there are objects and lights in my scene. What am I doing wrong?

A: Both the Skytracer and Steamer plugins need Z-Buffer data in order for their preview windows to give you an accurate example of what the final render will look like. Z-Buffer data is not created until LightWave has actually rendered a frame! The easiest way to generate this data is to simply press the F9 key (to do a sample render of your scene) or go to the Render panel and render a frame from your animation. This will provide Skytracer and Steamer with the data they need to create a preview in the plug-in interface.

Q: How can I apply a velocity to the Fractal Noise procedural texture and make it loop over a certain number of frames?

A: Fractal Noise is intended to be a random, nonrepeating pattern, so it's pretty much impossible to make the texture "loop" just by using a texture velocity. However, it is possible to render out an image sequence that will work just as well. Here's how:

Use the Disc tool to model a tube with a very wide diameter.

Flip the tube's polygons so they face toward the inside of the tube.

Make the tube white with a black Fractal Noise color texture that does not have any velocity applied to it.

Set the tube's Luminosity to 100% and Diffusity to 0%.

Place your camera inside the tube, facing one of the round sides.

Rotate the tube 360 degrees over an adequate number of frames (enough to keep the texture's movement smooth).

Set your camera preferences and select a file name to save the images with.

You may also need to change the camera's Zoom setting to reduce distortion of the texture along the edges of the camera's view.

Render out the image sequence and then apply this wherever you need a looping Fractal Noise texture.

Try using an image map Reference Null to rotate the looping Fractal Noise texture so that it moves in whatever direction you need it to.

Q: I want to render my animation with a Letterbox effect (so that it has black borders at the top and bottom of the rendered image.) There used to be a button in the Camera panel that did this automatically, but it's not there anymore. What's the best way to do this now?

A: The Letterbox option was removed because it didn't work correctly with all camera settings. The best way to duplicate this effect is to create a completely black Foreground Image, and a Foreground Image Alpha mask - the Alpha image should have a block of white where you want the animation to be visible, and black sections where you want the Letterbox effect to be. The Alpha mask will cut a hole in the black Foreground Image. Your animation will show through the 'hole,' with black 'Letterbox' borders at the top and bottom of the screen.

One advantage of creating the Letterbox effect this way is that you can position the effect wherever you want it to be. Many commercials use the Letterbox effect offset toward the top of the screen, so that there is room along the bottom of the screen for narrative text to be displayed. Another advantage is that LightWave will not attempt to render anything that is behind the black areas of the Letterbox effect. This can significantly reduce render times!

Q: I have a bunch of different animations that I need to render, but I don't want to sit around waiting for each one to finish. Is there any way to do Batch Rendering with LightWave?

A: Yes, you just have to use ScreamerNet. A lot of people are kind of 'afraid' of ScreamerNet, because it requires a bit of effort to set up. Note though, that the documentation for ScreamerNet is much better in LightWave 5.0 and 5.5, so setting it up is now a breeze. Here's how to use it for Batch Rendering:

Follow the setup instructions in your Reference Manual to install and configure ScreamerNet.

Start a ScreamerNet node (the LWSN.exe program).

Go to the Network menu in Layout and click on Screamer Init to initialize the ScreamerNet node that you just started. After a few seconds, you should see one CPU listed. Once the ScreamerNet node is initialized and available for use, load in all of the scenes that you want to batch render and then click on Screamer Render.

Make sure that all of your scenes already have the options set that you require BEFORE you load them into ScreamerNet, especially the Image Saving settings. If you start rendering a scene with ScreamerNet, and you don't have the scene configured to save your rendered work, nothing will be saved!

Q: I have a scene setup with Inverse Kinematics but I've noticed that IK starts to act very erratically when the goal object gets a few hundred meters away. Why is this happening and how can I prevent it?

A: Inverse Kinematics is much more stable and reliable in LightWave 5.5, but some very strange things still happen as the distance between your goal object and the object targeted to it become extreme. Sometimes it's possible to correct this erratic behavior by significantly increasing the Goal Strength.

Another solution is to parent all of the objects in your scene to one null object, then scale that object down to 'resize' your entire world. This will keep the goal object's Absolute distance relatively close to the other objects in your scene, and closer to LightWave's 'center' at 0,0,0. The only 'guaranteed' solution is to keep your goal objects as close as possible to the other objects in your scene.

That'll do it for this issue... see you again next time for more On-Topic discussions from the LightWave mailing list!

About the Author: In addition to running the Internet's LightWave mailing list, David Warner produces the TutorVision 3-D CD series of interactive multi-media CD-ROM's for LightWave animators. For more information about the LightWave mailing list and/or TutorVision3D, please visit the Event Horizon Studios web site at http://www.tv3d.com or send "snail-mail" to: P.O. Box 310 - New Baltimore, NY 12124.

GETTING DOWN TO BUSINESS

How Many Fingers Do I Have Up?

Are you confused yet? Good! The purpose for this article is to let you know how disastrous it can be to loose sight of your goal. For those of you who bought starting Your Own Animation Business, you might recall this statement. "The number one reason why people don't succeed at starting their own animation business, is they decide not to do anything to start one in the first place."

Yeah, it is a mouthful, but it is true. If you decided to just do it, then you are well on your way. However, in my humble opinion the number two reason why one would fail is lack of focus. It is difficult to get to where you are going when you don't know where you want to be. Yes, deciding to go is critical, but you need a destination. Okay, lets back up a little. You must set realistic goals for yourself where your business is concerned. You need to develop a business plan. This plan will help organize your direction and provide you with the most cost-effective method to reach your destination. While jumping into the car on a whim to go joy riding may be fun and exciting at the beginning, you will more than likely, end up lost or you will run out of gas.

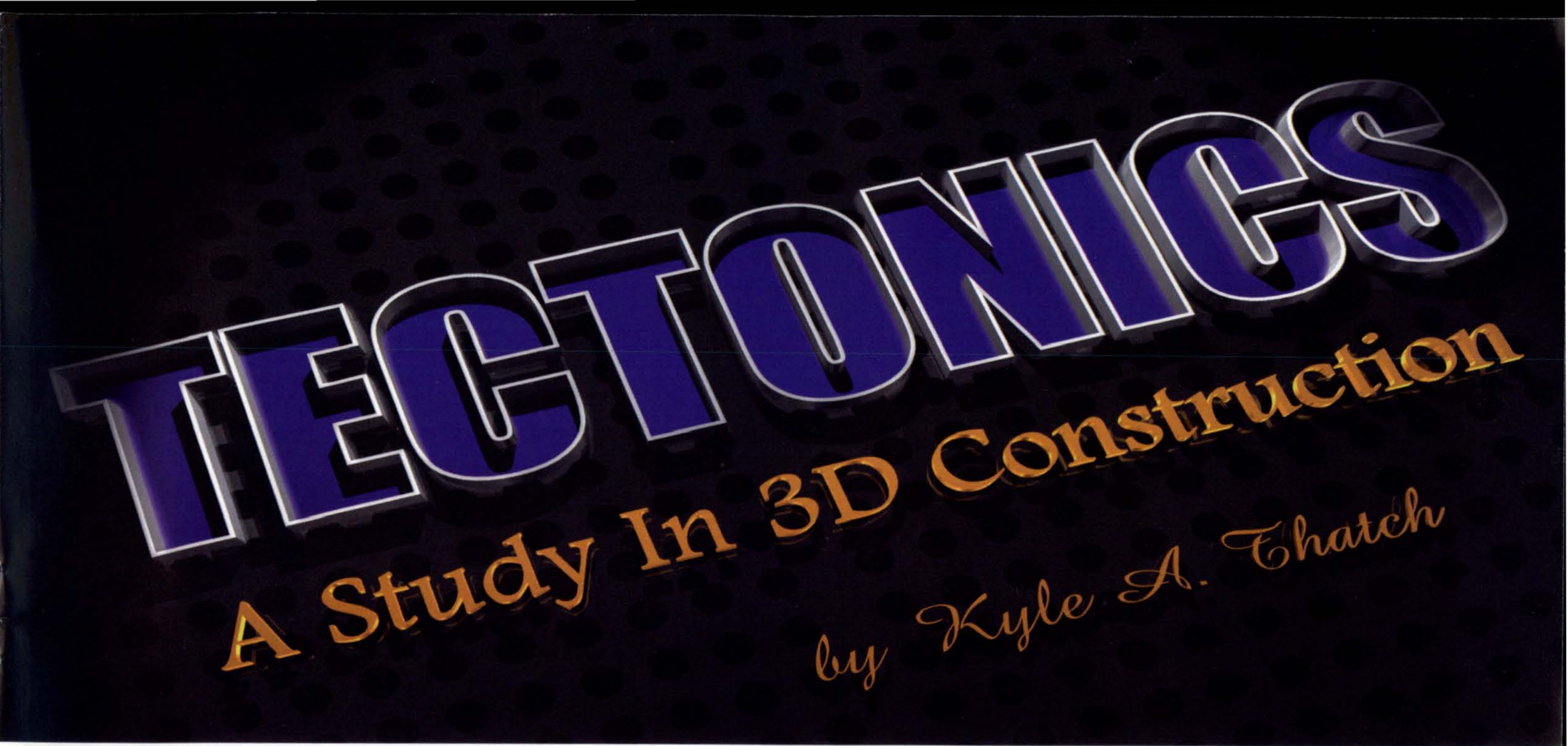
A business plan will cover the long haul but what about the day to day travel? This is where you pace yourself while behind the wheel. How far do you drive each day? Can you afford to stop and check out the largest ball of yarn the world has ever seen? Probably not. You have a schedule; you need to be at a certain place at a certain time and stopping to see Sam's Snake Shack is not the way to do it. I am referring to the daily distractions you face while building the next Digital Domain. As a self-employed person, you must discipline yourself in the workplace. It is very easy to go off on a rabbit trail and loose focus.

I find myself on the Internet often. I use it as a tool to do research and gather information. With all of the cool stuff there is to see, it is easy to get side tracked and go "PLAY" instead of doing your work. Another wonderful distraction is the dreaded spouse. There you are working away when suddenly in she walks wearing that little outfit you just can't say no to. I must admit, while being self-employed does have its advantages, it also has its disadvantages. You must really be dedicated to your goals to be successful. Another progress killer is the sudden desire to build a new spaceship. You just got that new plug-in that allows you to make the ever popular eagle in a barrel? (Check your LightWave plug-ins) Anyway, you get the idea. I am as guilty as the next guy. I find myself wanting to create. I don't like all of this business junk! "Damn it Jim, I'm an animator, not a Kelly girl!"

"Bones" from Star Trek does manage to wear other hats. Yes he does complain about it but he gets the job done and so must you. Take a good look at how effective you are in your working environment. Does your office or work area look like a prop from the movie Twister? Do you constantly find yourself looking for stuff? Clean it up! You own your own business so that also makes you the janitor. Just make sure you organize your stuff after work each day. Are you downloading worthless trial software from the Internet or are you writing those prospecting letters? I recently got into HTML and Web authoring. Man this stuff is cool! I got so distracted looking around the Web for cool Web page stuff that I lost a week of my life! When I looked at my bank account, I realized I had better get busy and find some work. Yep, I am guilty too.

As artists, it is easy to wander. I am not blaming anyone for this indiscretion; it is a natural impulse of the incredibly talented. That's us! As a business owner, I realize the need to remain focused to achieve my goals. The only way to accomplish that is to get into the habit of planning your activities. Stay with the plan. Organize your day in the morning. Write down your goals for the day and stick with it until it is done. Effectively use your time so you don't find yourself working 24 hours a day. After your day is done, walk away and have some fun. Who knows, maybe she'll still be wearing that little outfit you just can't say no to!

Tom Rennen is the 'superstar' of the 'Starting Your Own Animation Business' video and is a marriage counselor in his spare time!



TECTONICS

A Study In 3D Construction

by Kyle A. Thatch

Welcome back. Hope you all are having a great new year, as I write this in November of 1997. As a writer, you learn to look ahead into the future so - Happy New Year! Last issue we touched on the issue of detail in your Modeling and Surfacing of 3-D geometry. This time we're going to discuss some techniques that give that extra WOW or ZING to your models. Have you ever wondered how you would make threads on a bottle, or a screw? Ever wondered why your logos just don't look right? Don't worry, we are going to learn a few basic and not-so-basic tricks that will amaze and dazzle that next BIG client.

WHAT, ARE YOU CRAZY?

Let's talk about Logos, or creating text for an animation. Most people simply type out a word or create a logo, then name the different surfaces and that's it. Right? Yes, but that's where the problem begins. O.K., here's what I mean. Launch Modeler, and type the word "Crazy" using the font "Times New Roman." Then, Extrude the word 10 cm along the Z-axis. Now, using the polygon statistics button (w if you are in polygon mode) select the ten polygons with more than four vertices. Notice that you have just selected the Fronts and Backs of the word "Crazy." Name these surfaces "FrontsBacks." Next, press (shift ") to invert your selection. Name these surfaces "Sides-Smooth" and make sure to turn on Smoothing while you are in the surface attributes menu. Well, do you see anything that looks a little strange? Using the OpenGL view take a look at the word "Crazy." That's right - wherever there should be a sharp edge, there is not. Take a look at figure 1 to see what I mean.

Now then, how do we solve this little problem? Easy! Select the side polygons, and rename them, so that we can easily assign different surface attributes for the flat and smooth sections. Using figure 2 as a guide, name the side polygons "Sides-Flat" and "Sides-Smooth" (don't forget to turn on the Smoothing attribute for the "Sides-Smooth" surface, but leave Smoothing off for the "Sides-Flat" surface). Looks much better now, hmmm?

We can take this another step further by adding bevels to the word. Bevels give text a soft, less technical look. In some cases it can even make a word look like it is made of liquid or rubber. However, adding bevels can also add unwanted problems. Look at figure 3 to see the difference. It's not enough to just add bevels to the word... you must also define the beveled edge. Here's how: Select the "FrontsBack" polygons of the word "Crazy." Next, using the Bevel tool (b), make an Inset of 5mm and a Shift of 1 cm. Also, turn on the Inner and Custom options. Type in a surface name of "Bevels" and then click OK.

Again, using figure 2 as a guide, name the newly created bevels "Bevels-Flat" and "Bevels-Smooth" (remember to set Smoothing attributes where necessary). Then select both the "Bevels-Flat" and "Bevels-Smooth" polygons and press (x) to Cut these polygons from the object, then press (v) to Paste the polygons back into place. There you go, a great looking text object! By Cutting and Pasting the beveled-edge polygons back into the same place on the object, you define the edge by creating duplicate points. This in turn creates separate, sharper edges. This is one of the oldest tricks in the LightWave modeling handbook. Now I expect to see nothing but great looking text and logo objects from now on!

YOU MUST BE SCREWY!

Have you ever wanted to make a bottle or object that has a screw top, but were afraid to try because you didn't think you could make the threads at the top? I know the feeling, but I have come up with a way to make most any

(Continued on page 41)

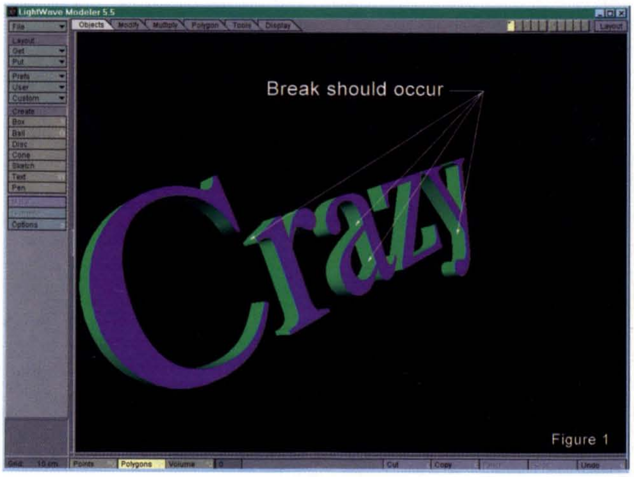


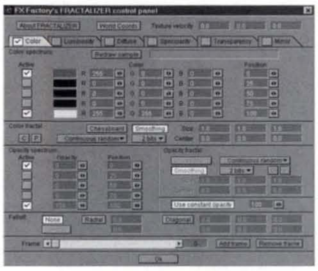
Figure 1

FROM THE FRONT

(From the front - Continued from page 9)

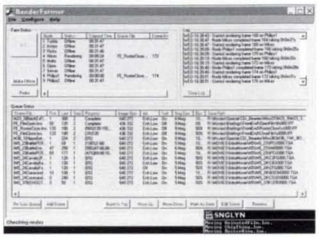
wasn't able to find your lw.cfg, and if you try to save, QV will crash. October 97 QV fixes two things. First, it searches for lw.cfg in the same places and in the same order as LW 5.5 does. Second, if for some reason it can't find lw.cfg, it will still allow you to use its internal Windows .bmp saver.

FRACTALIZER



Surfaces surfaces, and more surfaces! Fractalizer, new from Dynamic Realities, is a fractal noise shader plug-in that replaces LightWave's Fractal Noise adding even more control and versatility over animation, appearance and opacity. Using Fractalizer, you can create fire, explosions, and hyper realistic clouds without the huge rendering time. Five Color Spectrum: Allows easy and intuitive changing of the cloud size and the contrast between multiple colors. By applying the spectrum, animators can obtain the effect of electronic sparks. Radial Falloff: The effect can be specified to disappear along the radius. Perfect for creating cinematic explosion sequences. Fractal Opacity: This feature makes it possible to place the fractal effect in a precisely defined area on the object. Many unique effects can be accomplished with this. Imagine a burning spaceship, or a burned out hole. Fractal Morphing: Allows obtaining the effect of a changing color or texture without tedious object-by-object morphing. The possibility of changing each parameter gives the animator ultimate control over the texture. Keyframeable: All effects and controls are keyframeable for smooth morphs and gradual changes over time. Prices: Intel: $150, Alpha: $250, Mac: $150, Sun: $750, SGI: $750 Dynamic Realities www.dynamic-realities.com 1900-A Pewaukee Road - Waukesha, WI 53188 USA Sales: 1-800-944-5520 Main: 414-549-2200 Technical Support: 414-549-2200 Fax: 414-549-2225

RENDERFARMER



Free Software to celebrate the completion of I-War, Glyn Williams from Particle Systems is giving away RenderFarmer (for free and with no hidden charges.) The software makes the process of submitting jobs for rendering a piece of cake. (Just save them into a special directory) RenderFarmer is a ScreamerNet replacement for LightWave. Anyone who has used the LightWave ScreamerNet system for commercial work will realize some of its limitations. You can't change the queue of scenes to be rendered once started. You can't add or remove rendering nodes to the farm once running. If the system issues a command to render a frame - it then assumes that frame will be rendered (we know different). If you have to shut down the farm half-way through a render things get complicated. And most importantly setting up the whole thing to render a bunch of scenes is a tedious and time wasting task. "We produced RenderFarmer for our own needs (producing animation for games). It is left running all the time on a small machine and it is very easy to use and maintain. We reckon that since we started using it, it has saved our artists at least half an hour a day and made much better use of spare rendering resources." Here are the features: Easy to use. Just save LWS files to the "ToBeRendered" directory and the scene is automatically queued to be rendered. That's it. Automatically adds render nodes to the farm. Just run a SN.EXE (batch program) on a spare node and the node is detected and added to the farm automatically. Easy to see the state of scenes and rendering nodes. Nodes can have real names - like "Jim's PC." You can stop and re-start it and everything is restored. RenderFarmer will scan for missing frames and re-render absent frames. You can change the rendering order of scenes by promoting or demoting scenes in the queue. Does not influence system registry at all! The latest version includes documentation - example set-ups and will even detect bad scene files. The nature of our business means we cannot offer technical support (except in extreme cases) and it is unlikely that we will develop the program further. You can find out more about it and download it at www.imagesyn.demon.co.uk

STAR TREK SECRET OF VULCAN FURY

Interplay Productions is currently working on a Star Trek Adventure game based on the original series, using Motion Capture, Puppeteer, Metamation, and Morph Gizmo. All the original cast are modeled as they were in the 60's TV show, the same goes for the sets and the ships (which look a little more realistic, but retain the same flavor of the show.) You can view artwork at www.interplay.com/fury, but the artwork on the site and the trailer demo were done late 1996. Needless to say, the characters have evolved a lot since then. It's expected to be released in the Spring of '98.

SHADOW WARS

LightWave was used to create all the ship graphics for the first Babylon 5 computer game. The game is a very diminutive arcade shooter called SHADOW WARS, and is currently in release as part of the Babylon 5 Arcade Utility, published by Sound Source Interactive, Inc.

REAL FLOW

RealFlow
Fluid Dynamics Engine

A small independent group of 3D developers from Spain are working on a new particle system suited for computer graphics based on hard-core Computational Fluid Dynamics. The project is tentatively called RealFlow. Although it's still undergoing lots of R+D, it's in a very advanced stage of development. It can accurately simulate all kinds of liquids, gases and highly viscous things interacting with a dynamic environment comprised of triangles. They could even customize the dynamics engine to handle more exotic fluids such as lava and snow. There are some demo animations (AVI files) at www.3dspot.com/~realflow/ (we've included many of the animations on the LightWavin' CD-ROM). There's also some animations of RealFlow's particles raytraced with LightWave 5.5 at www.cris.com/~alesniak/rf.html (also on the LightWavin' CD). They have an OpenGL-based demo version of the system which runs on WindowsNT and links to LightWave 3D through a small server plugin (located at http://www.etsin.upm.es/victor and they are running a small "beta testing" program with people from some major LW animation houses. They do believe this advanced dynamics engine will open the door to a whole new range of visual effects as soon as they polish and integrate it smoothly with popular 3D packages such as LightWave. (The fact that LW doesn't support animatable metaballs doesn't help much though, so they are also developing a custom, high quality rendering API that we will plug into the system). They would like to get feedback from potential end users of this powerful technology such as technical directors and visual FX supervisors at CGI studios. They would also like to contact serious partners, investors, distributors, beta testers or any other interested parties; with this support, they can switch to full time development.

BOB HOOD WEB SITE

After some months Bob Hood's (LightWave's LScript programmer) Web Site is back online. Bob's personal LScript work area is back up as well. This collection of pages include things like the (most current) on-line documentation, software release notes, some tutorials, and the Object Agent release pages. Check it out at www.flash.net/~bhood2/

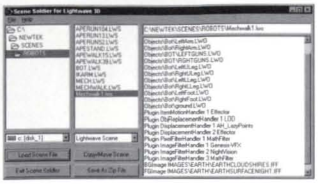
TAUT

Version 1.1 of the Taut plug-in for Modeler is now available: "Taut is a LightWave 3D® plug-in for Modeler which allows you to 'snap' a series of points along an arbitrarily defined line in 3D space. You can choose to snap the affected points to the 3D-line, or to form a 2D plane." Taut is FREE. You can get it on the LightWavin' CD-ROM or download it from www.cadvision.com/ewertb/Taut.html

SCENE SOLDIER

Scene Soldier is a low-cost LW3D Scene Management Utility for Win 32 Systems. It allows you to view all of the objects, plugins, Image maps, Projection maps, Front Image maps,

FROM THE FRONT


Scene Soldier for Lightwave 3D
C:\
NEWTEK
SCENES
ROBOTS
APERUN104.LWS
APERUN131.LWS
APERUN52.LWS
APESTAND.LWS
APEWALK15.LWS
APEWALK38.LWS
BOT.LWS
IKARM.LWS
MECH.LWS
MECHWALK.LWS
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Objects\Bot\RightLLeg.LWO
Objects\Bot\LeftFoot.LWO
Objects\Bot\RightFoot.LWO
Objects\Bot\ground.LWO
Plugin ItemMotionHandler 1 Effector
Plugin ObjReplacementHandler 1 LOD
Plugin DisplacementHandler 1 AH_LazyPoints
Plugin DisplacementHandler 2 Effector
Plugin PixelFilterHandler 1 MathFilter
Plugin ImageFilterHandler 1 Genesis-VFX
Plugin ImageFilterHandler 2 NightVision
Plugin ImageFilterHandler 3 MathFilter
BGImage IMAGES\EARTH\EARTHCLOUDSHIRES.IFF
FGImage IMAGES\EARTH\EARTHSURFACENIGHT.IFF
c: [disk_1]
Lightwave Scene
Load Scene File
Copy/Move Scene
Exit Scene Soldier
Save As Zip File

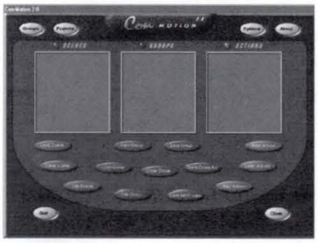
Background Image maps, Motion files, Particle Storm files, Object Texture maps, etc. - then you can Copy/Move/Delete/Archive the scene to a directory of your choice, with or without the scenes directory tree intact. With Scene Soldier you simply choose your scene directory and then double click the scene file you wish to manage. Scene Soldier then parses the scene and object files for all the components that makeup the current scene. You can then Copy, Move, Delete, or Archive the files to a destination of your choice. Scene Soldier supports the archiving of Puppet Master, Morph Gimzo, and Particle Storm files. Scene Soldier never writes any data to your Lightwave scene or object files ensuring their integrity. Scene Soldier can be purchased for $19.95 U.S. For $39.95 U.S. you'll get an unlimited upgrade version for the life of the product. For more information or to order, please contact Kilo Volt Amp Design - 4914 North Island Hwy. - Courtenay, B.C. V9N 5Z1 Canada. A downloadable Demo and more information is available at www.island.net/~kva/ss/

PARTYCLES

On November 24, 1997, United Magnetic Video previewed the release of "Partycles" , a new particles animation plug-in for LightWave. A fully integrated plugin that works in Layout. With it, you can easily do very complicated particle effects which would otherwise be extremely difficult and labor intensive. Because "Partycles" works directly in Layout, you get what you see. Simplicity is the main goal of this program. You can assign a "leader object" to control the particle's movement. By assigning key frames to the leader object, you can control the particle's direction. With the "Partycles Shader" plug-in, you can change the particle's color over a period of time. The "Partycles Collision" plug-in will control the impact of the particles with objects. By using the "Partycles" tools included in the main package, you can achieve very complex effects such as fire, snow, moving water, fireworks, etc. "Partycles" should be available by the time you read this, for Windows 95 & NT (Intel). Suggested Retail Price $249.00. United Magnetic Video - 736 East Moreno Avenue - Colorado Springs, CO 80903 - phone 719-634-4015 - umv@pcisys.net

CON-MOTION 2.0

Also announced by United Magnetic Video was the new Con-Motion 2.0. Con-Motion 2.0 is a powerful utility that gives you total control over the positioning and movement of objects, bones and light sources. Sophisticated character animations become easier than ever before. Con-Motion 2.0 can be invoked from LightWave's Layout menu and shares data with LightWave directly. Con-Motion 2.0 also has the ability to save scenes in a standard file format compatible with LightWave versions running on other platforms. Con-Motion 2.0 makes it easy to: Synchronize character movements - Repeat specific sequences like walking, running etc. or paste them at a given point - Maintain proper character registration and avoid slipping with respect to the background. Con-Motion 2.0 allows you to divide a character into groups of elements and tracks their positions and movements which can easily be orchestrated and reordered during an animation. The new version 2.0 interface has been streamlined for greater animator convenience and productivity, achieving design goals of reliability and efficiency. Con-Motion 2.0 for Windows 95 & NT, Intel platform, should be ready by the time you read this. Suggested retail price $349.00.


Con-Motion 2.0
Con-Motion

PLANET OF GOODS TAKES OVER LIGHTSPEED

Lightspeed Multimedia, a major distributor of LightWave products for the past three years has been acquired by Planet of Goods (POG). Michael Anderson will be heading up the LightWave division for Planet of Goods. He says, "Our goal is to provide a large line of products at the very best price for our customers. Feel free to check out our competitors and then shop at Planet of Goods last – we'll match or beat all prices and you're guaranteed the best service in the industry. We hope to make POG a household name in the LightWave market, when it comes to your purchasing needs." They can be reached at 800-POG-TOWN or www.planetofgoods.com

4D PAINT

4DVISION Asia announces that 4D Paint 1.6 Rembrandt & Goya (Now Shipping) supports the LightWave 3D 5.5 LWO file format. 4D Paint is designed to provide users with faster, more realistic and more accurate texturing than ever before possible. Objects mapped and having multiple surface and material definitions in LightWave can now be imported directly into 4D Paint, painted and returned to LightWave. This provides a smooth and convenient interface, resulting in faster production times, increased rendering realism and more efficient models. 4DVISION Asia has been set up in conjunction with 4DVISION LLC to market and support the 4DVISION Plug-ins. 4DVISION Asia was formed in June '94 to develop new products and service the Asia/Pacific market. 4DVISION LLC USA PH 800 252 1024 www.4dvision.com 4DVISION Asia E-Mail 4dvisasia@4dpaint.com www.4dpaint.com

DOLPHIN COLLECTION VOLUMES I & II

Replica Technology introduces the Dolphin Collection Volume 1 CD-ROM which is a collection of 19 real-world Scaled Dolphins. (over 100 LightWave 3D Objects). This collection includes 19 species from the Delphinidae family. Featuring the Bottlenose Dolphin (Flipper), this collection also contains an Atlantic Humpbacked, Atlantic Spotted, Atlantic White-sided, Chilean, Clymene, Commersons, Common, Dusky, False Killer Whale, Frasers, Heavisides, Hectors, Hourglass, MelonHeaded Whale, Northern Right Whale, Southern Right Whale, Pantropical Spotted and Pacific White-sided dolphins. Ready to render or animate for immediate gratification. Layout example scenes (.LWS files) are included and contain key framed animation, morph targets, skeletal bones and lighting. Each object includes high res and low res versions, and morph targets for facial animation. Also included are detailed texture and image maps for surfaces with an easy naming convention. Full 24-bit browser images of objects can be viewed by the included slideshow utility. Also available is the Dolphin Collection Volume 2 CD-ROM which is a collection of 20 real-world Scaled Dolphins, River Dolphins and Porpoises (over 100 LightWave 3D Objects). This collection includes 8 species from the Delphinidae family, 6 species from the Phocoenidae family (Porpoises), 5 species from the Platanistoidae family (river dolphins), and 1 species from the Sirenia family (sea cows). Featuring the Killer Whale (Orca) and the Manatee, this collection also contains a Peale's, Risso's, RoughToothed, Spinner, Striped, Tucuxi and WhiteBeaked dolphins, Burmeister's Porpoise, Dall's Porpoise, Finless Porpoise, Harbour Porpoise, Spectacled Porpoise, Vaquita, Amazon River Dolphin, Chinese River Dolphin, Fransiscana, Ganges River Dolphin and Indus River Dolphin. Suggested retail price is $195 per volume. Available for the Windows 95, Windows NT 4.0, DEC Alpha and SGI platforms in an ISO9660 level 3 format CD-ROM and for the PowerMac in an HFS format CD-ROM. DXF versions on Windows CD-ROMs also available. 716-337-0621 or 800-714-8184 www.replica3d.com

3D TOONS SHOP

If you're looking for some cartoon characters to use in LightWave, you might want to check out www.its-ming.com/3dtoonshop.html. This site has quite a collection to choose from, some free samples, and you can order the objects right then and there.

300 MEG ANIMATION

Dan Maas, a talented writer who brought you 'Smoke, Fire & Explosions' in the Nov/Dec issue, was kind enough to send us his 300 meg animation titled, "The Chase". Check it out on the LightWavin' CD-ROM.

That's it for this issue. If you are a developer with a press release, wish to make a product announcement or just have some information you feel is newsworthy, please e-mail the information along with any images/animations to news@lightwavin.com with the subject header listed as "FROM THE FRONT NEWS."

CHARACTER SHOP

BY DOUG KELLY

In issue #4 I discussed the importance of keeping your character setups simple. Now I'll expand that advice to include 'work strategies' for creating character animation.

Character animation is one of the most complex tasks you're ever likely to attempt. You need to coordinate a large number of variables with a very small margin for error. Using your artistic judgment, sense of timing, and technical proficiency with LightWave and supporting software, you must impart the illusion of life. It's a tough job, and you can use all the help you can get.

There's Method In This Madness

The most valuable help you can give yourself is an efficient work strategy that keeps you productive. Nothing is more disheartening than for your work to be wasted by something you could have foreseen, or by the caprices of clients. What you need is a set of procedures and tools that minimize the damage, enabling you to salvage as many of the pieces as possible and move ahead with minimal delays.

The tools and procedures you choose will depend on the type of character animation you do and the resources you have available. A work strategy that succeeds for a sizable commercial shop (like Foundation Imaging) is not necessarily a good one for a one-person shop doing local TV ads. Vice-versa, a work strategy that you have been using successfully as a solo animator may fail when you apply it to a larger production team. Fit the tools to the job.

I have a short list of criteria you can use to develop a work strategy that is best for your particular situation.

Reduce redundant work
Support incremental detailing
Provide rapid feedback
Create documents for decision-makers
Stay flexible

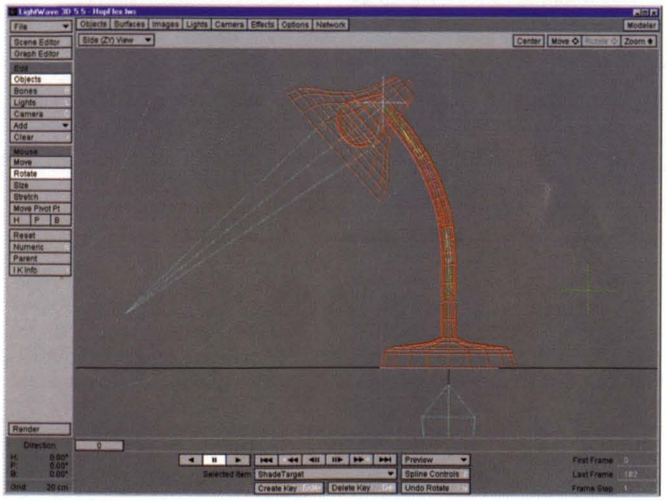
Before making changes to the way you work, check the new procedures against these criteria. If your proposed changes don't measure up, fix the problem before you go any further.

Reduce, Recycle, Relax...

'Reducing redundant work' means not repeating any work that isn't creative. Backing up files, updating story reels, replacing a character model in a complex setup, and rendering a batch of completed shots are the kind of work you should automate if possible. Doing it once is a learning experience; doing it twice is annoying; doing it a couple of times a week can be a sentence in Purgatory. Work 'smart.' Create macros; use batch files, programs or other tools to do most of the repetitive work. This is the type of work that computers excel at: repetitive, complex tasks requiring no artistic judgment. If you don't use the computer for these tasks, you're losing CG character animation's primary advantage over traditional methods. You might as well be using pencils or clay.

'Supporting incremental detailing' means roughing out the entire animation before making revisions and changes. For example, the first 'rough' should be a script. A script is very easy to change since it's only words on paper. Odds are good that you, your production team, or the client, are going to make some major changes to the script. It's almost unheard of for a first draft script to be identical to the final edit of a film. Since you can be certain of changes, you should make as many of them as you can at the lowest, cheapest level of detail. You should be able to revise the entire script to the decision-makers' satisfaction before you start work on the next level of detail. If your work strategy requires you to complete a detailed character model or animate a shot before the story is approved,

(Continued on page 34)



LightWave 3D 5.5 - HopFlex.lws

Side (ZY) View

Direction H: 0.00° P: 0.00° B: 0.00°

Grid 20 cm

Selected Item ShadeTarget

File
Objects
Surfaces
Images
Lights
Camera
Effects
Options
Network
Modeler
Scene Editor
Graph Editor
Edit
Objects
Bones
Lights
Camera
Add
Clear
Mouse
Move
Rotate
Size
Stretch
Move Pivot Pt
H
P
B
Reset
Numeric
Parent
I K Info
Render
Center
Move
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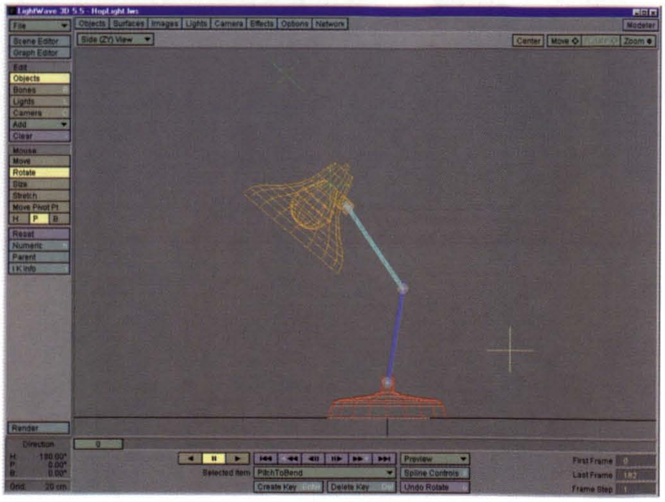
Zoom
Preview
Spline Controls
Create Key
Delete Key
Undo Rotate
First Frame
Last Frame
Frame Step

FIGURE 1 Simple desklamp setup.



LightWave 3D 5.5 - HopLight.lws

Side (ZY) View

Direction H: 180.00° P: 0.00° B: 0.00°

Grid 20 cm

Selected Item PitchToBend

File
Objects
Surfaces
Images
Lights
Camera
Effects
Options
Network
Modeler
Scene Editor
Graph Editor
Edit
Objects
Bones
Lights
Camera
Add
Clear
Mouse
Move
Rotate
Size
Stretch
Move Pivot Pt
H
P
B
Reset
Numeric
Parent
I K Info
Render
Center
Move
Zoom
Preview
Spline Controls
Create Key
Delete Key
Undo Rotate
First Frame
Last Frame
Frame Step

FIGURE 2 Simple swing-arm lamp setup.

PHOTOREAL

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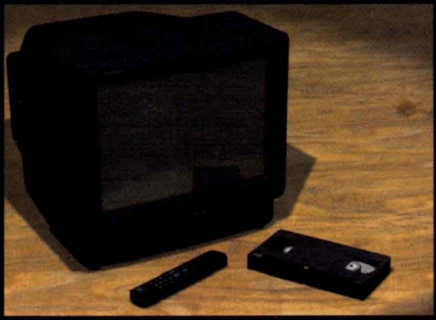

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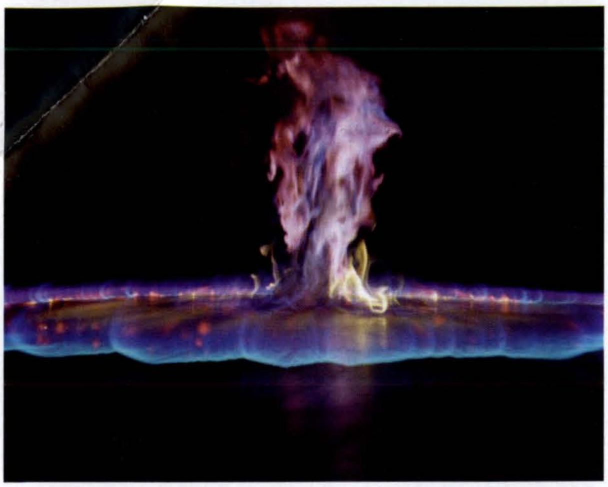
PRODUCT REVIEW



PYROMANIA PRO

By Bohus Blahut

Since shortly after the 'Big Bang' humankind has been fascinated by fire and explosions. For eye appeal, nothing outdoes the heat and undulating color of a blast! A LightWave artist creating fire effects faces a problem, however. His computer can choke on the computations needed to mimic fire and smoke using particles. A practical alternative is to use an image sequence. If you don't want to blow up your own stuff to get the image sequence, where do you turn?

This explosive 2 CD set is the answer. The discs contain more than 30 explosions and fire effects. Included are nuclear blasts, billowing fire, a matchstick, even an exploding car! These are very high quality images! Visual Concept Engineering have fired up the effects for all three Star Wars films, RoboCop, Beetlejuice, and more recently Men in Black and Starship Troopers. Their expertise shines through in these Hollywood caliber effects.

This disc is VCE's third release of this kind. The new set is even more versatile than volumes One and Two. It can serve well not only in your 3D work, but also for print, video-titling, multimedia and the World Wide Web. The CD includes a color booklet profiling most of the effects - frame counts, pixel dimensions, even a few creative hints. The most useful reference is an included video cassette showcasing all effects. Kudos to VCE for providing the video, and making it fun to watch!

All images are shot on 35mm film, scanned (not frame-grabbed) at 2048 x1536, then cropped, to keep filesize down. All save one sequence are in Targa format - the alpha channel mattes are JPEGs. By the way, LightWave effortlessly loads Targas. AVI previews are supplied for the explosions. The effects fit neatly into four categories: Mushroom explosions, Zero-G fireball explosions, Fire, and my favorite - Miscellaneous.

GOT SOME 'SHROOMS, MAN?

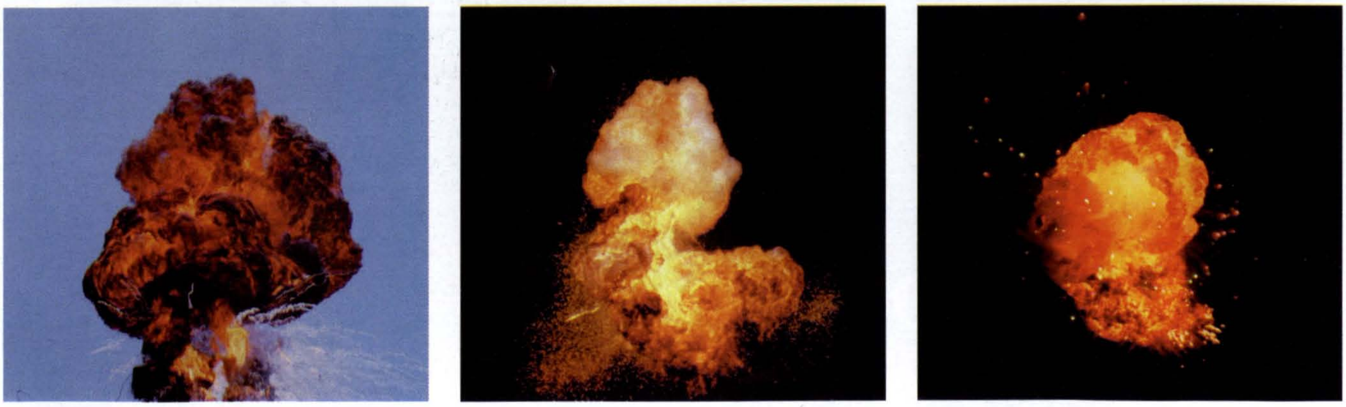
Mushroom explosions follow nuclear blasts, probably one of the most terrifying images spanning the period from the end of WWII through the Cold War. Pyromania One also had a mushroom explosion, but the blast escaped the borders of the 720 x 540 picture. This limited its use a bit (though it didn't stop Foundation Imaging from using it in the intro sequence to Babylon 5). All the mushroom clouds on this set stay within their frames, and are also provided in large dimensions.

This allows for a great deal of flexibility. You no longer have to fade out explosions before they reach the edges of the frame. You can even rotate, or zoom-in on an explosion, with no loss in video resolution. Imagine flying a spacecraft into an explosion while a spinning, careening camera follows it! Like the other sequences on this disc, the mushroom clouds are shot against a black background. The sole exception is one daylight explosion (which is one of the few sequences on the discs in JPEG format.)

IN SPACE, NO ONE CAN HEAR YOU EXPLODE

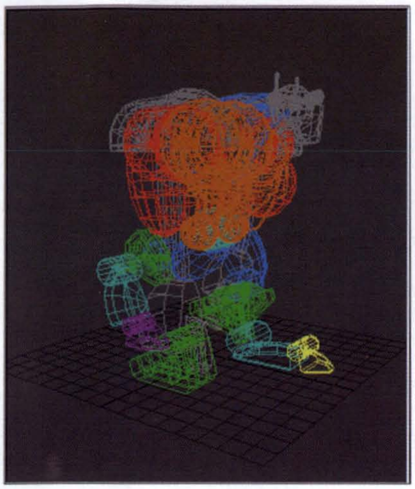
Zero-G explosions are the gravity-free, spherical fire effects that litter outer space in movies and television. In a vacuum you really wouldn't have lingering fireballs like these. Still, Star Wars has legitimized this kind of effect, so you may not care about being caught behind the physics 8 ball!

(Continued on page 45)



Stills from the Pyromania Pro CD

PRODUCT REVIEW



KEYPRO 2.02

By Doug Kelly

KeyPro 2.02 is a stand-alone program intended to "aid in the creation, development and implementation of character animation using LightWave 3D," to quote from the manual.

It generally costs as much in time and effort to create character animation with a computer as for a comparable level of quality in traditional clay, puppet or cel animation. The only significant benefit in using a computer is that you can edit, revise and tweak your animation without wasting a lot of your earlier efforts. If you are going to take full advantage of the computer, you need tools that make editing and revising your animations as simple and easy as possible. KeyPro 2.02 is a big step in the right direction for LightWave character animators. This program enables you to save, recall, edit and reuse your characters, motions and poses, using standard cut-and-paste functions that are fast, intuitive and easy to learn. If your time is worth anything, and you animate complex hierarchies, KeyPro 2.02 will be a valuable addition to your LightWave toolkit.

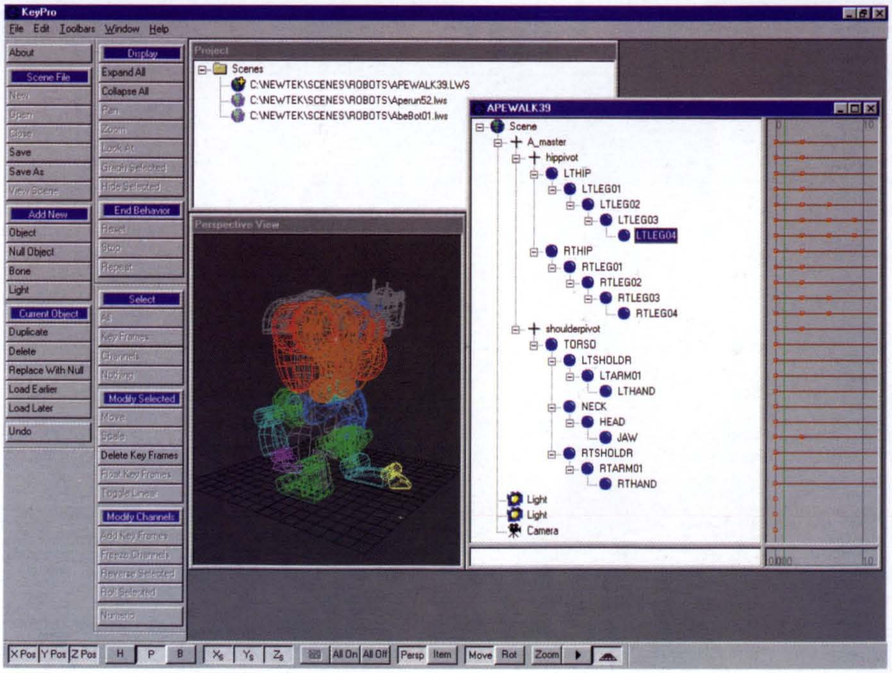
What You Get

The KeyPro package consists of a single 3.5" diskette, a registration postcard, and a half-size 3-ring binder containing a 46-page manual. Installation is easy, using the standard InstallShield Wizard. The application and associated files occupy less than a megabyte on the hard drive. The other system requirements are 3 Mb hard drive space (mostly for working files), 32 Mb RAM, and a minimal VGA graphics card, although OpenGL is recommended.

I installed KeyPro on two different machines, one under Win95a and the other WinNT4.0, each of which reliably run LightWave 5.5. Unfortunately, I found that the OLEAUT32.DLL for Win95a causes a fatal error when KeyPro attempts to launch. This means that the current release of KeyPro may only run on WinNT4.0, not necessarily all Intel machines are capable of running LightWave. The System Requirements section of the manual doesn't say anything about operating system compatibility, so this could be a nasty surprise for users still limited to Win95. If you are running LightWave under Win95, you should check your system's version number and contact CineGraphics for an answer to this problem before you buy KeyPro. CineGraphics' tech support staff are knowledgeable and helpful.

KeyPro's manual does not have an index, but the table of contents is adequate for finding any information you'll need. The manual is a short read, well-written, clear and to the point, with a logical structure following the layout of menu options and dialogs within the program. You should be able to go through the entire manual in half an hour to 45 minutes without straining.

(Continued on page 46)


KeyPro
File Edit Toolbars Window Help
About
Scene File
New
Open
Close
Save
Save As
View Scene
Add New
Object
Null Object
Bone
Light
Current Object
Duplicate
Delete
Replace With Null
Load Earlier
Load Later
Undo
Display
Expand All
Collapse All
Pan
Zoom
Look At
Graph Selected
Hide Selected
End Behavior
Reset
Stop
Repeat
Select
All
Key Frames
Channels
Nothing
Modify Selected
Move
Scale
Delete Key Frames
Float Key Frames
Toggle Linear
Modify Channels
Add Key Frames
Freeze Channels
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Scenes
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C:\NEWTEK\SCENES\ROBOTS\Aperun52.lws
C:\NEWTEK\SCENES\ROBOTS\AbeBot01.lws
Perspective View
APEWALK39
Scene
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LTHIP
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JAW
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RTARM01
RTHAND
Light
Light
Camera
0
10
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10
X Pos
Y Pos
Z Pos
H
P
B
All On
All Off
Persp
Item
Move
Rot
Zoom

FIGURE 1. KeyPro 2.02 interface

COMPANY PROFILE

Prem Subrahmanyam Graphic Design

Company? Prem Subrahmanyam Graphic Design

Date Company Founded? July 1995

Number of Employees?

1, with the generous assistance of Prem's wife, Joy, and occasional contribution from other family members (six children)

Name and role of employees?

Prem Subrahmanyam: President, Senior Animator, Chief Software Engineer

Why and how was your company started?

For awhile, I worked at a production studio as an animator, but had to leave that job to take on a better-paying, corporate-type job, occasionally doing freelance animation on the side for a few local Toaster-owners. I quickly grew tired of 'the corporate life' and wanted a job that allowed me to work from home and be closer to my family. Once a long-term contract programming work opened up, I launched out on my own. A few months later, I had enough money to buy Lightwave for the PC, and then turned my attention to programming plugins.

What do you see as your company's primary mission?

My mission is to create powerful, yet affordable, plugins for the Lightwave user. As an animator, as well as a programmer, I see things from both directions, which I believe places me in a rather unique position. I hope from this vantage point to be able to be of service to fellow "Waveheads".

What are your current products and why were they created?

Prem consulting with his chief software tester, Hannah.

Surface Effectors was really born out of just playing with the Lightwave plugin SDK (software development kit). Being connected to the internet, I was able to keep other Lighwave users apprised of what I was tinkering with...one day, the idea of programming a surface effector type plugin popped into my head, and the idea took off. Surface Effectors has now sold nearly 800 units and has been used in many television shows, games, and even feature films.

What are some things you are working on now?

Aside from animation projects in-house, development continues on a new version of Surface Effectors (no firm date on availability yet), and an expressions plugin, dubbed Relativity (slated to be available by the tiue you read this). I'm really excited about Relativity and the things you can do with it—I'm having a lot of fun playing with it in my animation projects. Some of the features available so far in Relativity include the ability to mathematically relate the motion channels of any item to those of any other item, the ability to target any item at any other item (without using IK), the ability to have cyclic animations driven by mathematical relationships, and, by using a bone chain, the ability to create objects that snake along their motion paths. There are more features in the works for this plugin, and I really feel that it will make a powerful addition to the Lightwave user's arsenal.

What do you see in the future for you and your company?

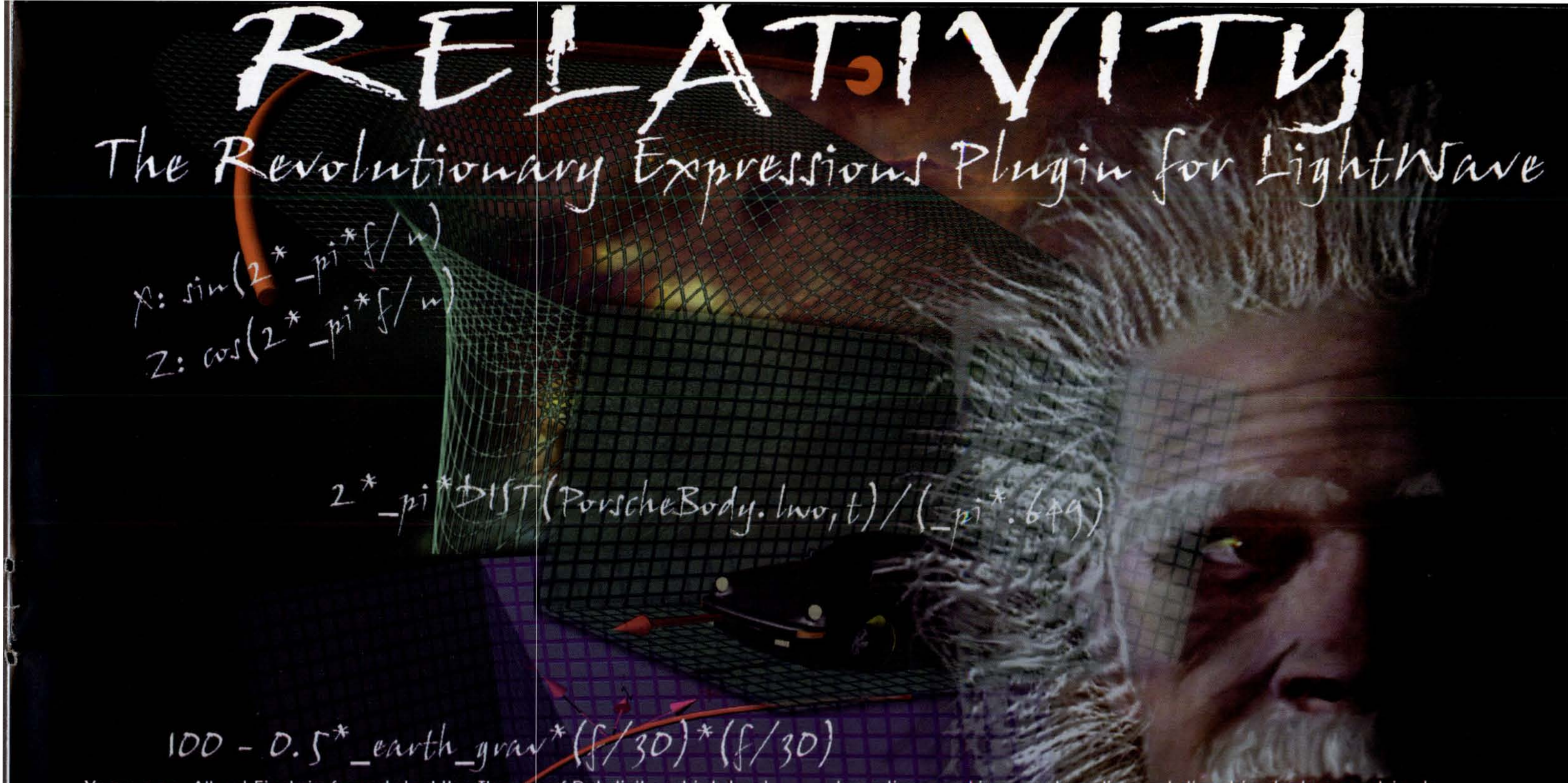
To continue to add to our product line and extend Lightwave's functionality even further. Lightwave makes a powerful foundation upon which to build exciting products.

Is there anything else you would like to add?

I would like to say that there has been one aspect of our company's work this past year that has been the most immensely satisfying. The numerous e-mails or personal thanks from satisfied customers. You are the reason why I do this work.

RELATIVITY

The Revolutionary Expressions Plugin for LightWave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Years ago, Albert Einstein formulated the Theory of Relativity, which had some strange implications. Space was related to time, time is related to space, energy is related to mass, an object's path through space (indeed, the shape of space-time itself) is related to the gravity of other objects... profound implications, indeed. These implications led to revolutionary developments in science.

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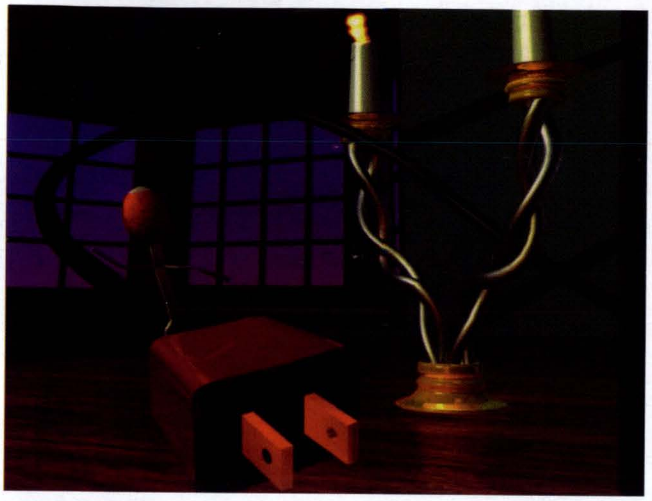


LIGHTWAVE 3D PLUG-IN POWER

by Steve Bowie

This recent addition to the Desktop Images 'stable' of LW tutorial videos is hosted by NewTek's own Brad Peebler. It's a bit odd reviewing this tape, as it's not really about LightWave per se. It's not really appropriate to call it a tutorial either, as the tape is more of a guided tour of three worthy contributions to the LightWave toolset - MacroForm (One and Only Media); Particle Storm (Dynamic Realities) ; and WaveFilter (Unlimited Potential.) Having said that, if you're thinking of buying one of these plug-ins, this is a great way to get a good look at them first.

The 'package' is typical Desktop Images fare, that is, well done - good production values, audio, packaging, and a thoughtfully included index card. By the way, this tape is LW5.0 based, but since the principle focus isn't LW itself it, doesn't seem to suffer for it. Peebler maintains a brisk pace throughout this roughly 90 minute video. He launches into a discussion of MacroForm within seconds.

Macaroni-form? Perhaps...

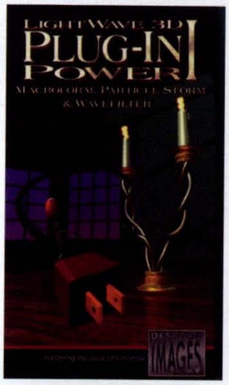
MacroForm itself is awesome! Divided into Productivity and Rail Tools, it enhances and extends Modelers own native toolset marvelously. Peebler makes it abundantly clear why many have fallen in love with this software. Where some tapes of this sort are just rehearsals of the menu options, 'P-I Power' is much more practical. Commonplace sounding functions like 'Dimensions,' 'Align and Center,' and 'NewBox' are set into real-world application contexts - you can decide if you think they're worth the dough based on your own needs.

While flying right along, reasonably decent depth is achieved in examining each tool. Not only do we get to see them in action, but where appropriate we get tips or cautionary advice. The legendary power of MacroForm is shown off in the creation of the complex double-spiral candlestick object seen in the accompanying cover scan. Naturally, the modeling is done before our eyes.

Particle Accelerator...

Particle Storm Lite is a bona fide adopted son of LightWave now. Consequently, it behooves us all to get to know the new family member. Peebler dances quickly through the pertinent controls, with emphasis on PS' great interactivity. Recycle, Birthrate, Deathwish, Gravity and Wind, man this isn't a plug-in, it's an epic!

The process of recording a PS 'group' and making it function in Layout are clearly illustrated. Again, valid cautionary remarks are made as the need arises.



The Surface Fuzz shader plug-in and the PS Motion Plug-In (which allows object replacement in place of simple 'pixel-particles' are also discussed. Their usage is illustrated (in the latter case, a stream of bubbles suitable for a champagne animation is created.) Each step necessary to reach the goal is done onscreen, leaving little room for error.

The Particle Storm segment of 'P-I Power' runs a little under thirty minutes, and that's adequate time for Peebler to take a novice from 0-55 m.p.h.. It's hard not to get excited about the possibilities of this program, and

(Continued on page 39)

Shots from the video.

PRODUCT REVIEW

ORGANIC MODELING & ANIMATION

by Steve Bowie

Dave Lombardi is a veteran Waver - as part of his duties at Digital Muse in Santa Monica he served as head animator for the TV series Sliders among other things. With network level experience in character animation, he is certainly capable of taking us 'through the motions.'

Off Topic: A Word about Desktop Images (DI)

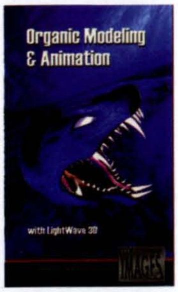
'OM&A' is yet another example of Desktop Images' commitment to serve the LightWave market. DI was a pioneer in this area. They are to be commended not merely for being persistent and prolific, but for the high quality of their offerings. DI's tutorialists consistently 'know their stuff,' and convey it well. The tapes themselves are nicely shot, edited, and packaged. They always include a useful index card too.... nothing shabby about these products in any way, good work people! This tape, by the way, is one of the first available using LW5.5.

Back to the Drawing Board:

Lombardi begins with the use of a concept sketch and moves right through to the final level of detail. He takes us though the creation of a 'clone' of a sand-worm object from an episode of Sliders. The first 40+ minutes are spent in Modeler, beginning with a box and winding up with your worst nightmare. As we move along we are reminded of the benefits of keeping it simple, using minimalist techniques to avoid a large poly count. For example, when modeling the creatures jaw we are given reasons to use Smooth Shift, rather than bevel or extrude.

Shhh.... I'm Working!

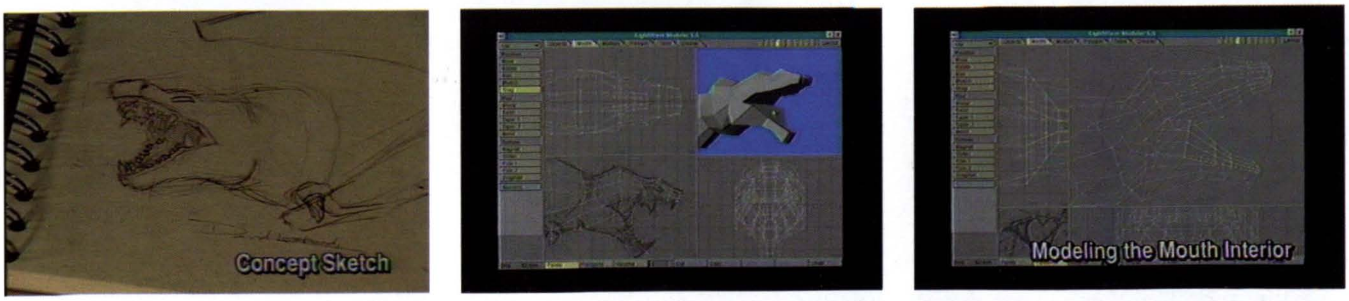
Having said this, throughout the tape one can't help noticing some rather lengthy silences - when distracted with the job at hand, Dave clams up! OK, I too have to stop walking to chew gum, but in this context it's just a bit distracting. While reviewing the tape I was grabbing frames for this article... I kept thinking I'd crossed the controls up and lost the audio somehow. This isn't really a nuisance of any significant degree. Still, the verbal 'filler' that often accompanies these moments in other tutorials often contains nuggets of useful information (whether technical comments on optional approaches, or philosophical comments on the motion, composition or lighting.) When asked to buy a ninety minute tape, I'd like a good 85 minutes of the thoughts of the 'master.'



This isn't to suggest there isn't a lot of interesting 'patter.' The commentary offers lots of tips, including 'rounding' without abusing Metaform, the benefit of going a little extreme before Metaform/NURB'ing, the use of Smooth Shift vs. Boolean to add detail. Lombardi covers something I've not seen much discussed elsewhere - simple enough to model a creature, but how about detailing the inside of its mouth, those awful teeth and the slimy gums (Yuck! Thankfully we manage to avoid discussing alien plaque!) Quite suitably horrifying dental details are next on the agenda.

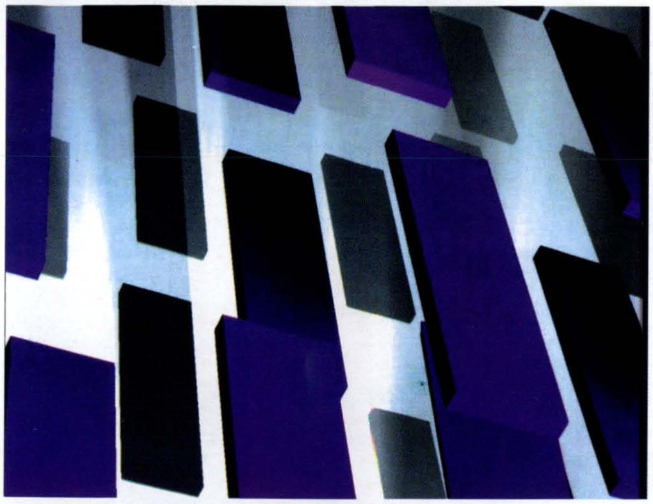
Speaking of...errr.. 'slimy'... like several other tapes from Desktop images, this one is replete with a chroma-keyed anim looping in the background (behind the view of the narrator at his workstation.) To tell the truth? I could do without this - in some instances (like the John Gross 'QuickStart' series) it's just repetitious.

(Continued on page 44)



Shots from the video.

PRODUCT REVIEW



STEAMER VIDEO

by Steve Bowie

Brad Peebler is back, with more LightWave 5.5 specific tutorial material in this roughly 70 minute flick from Desktop Images. Daniel Maas gave us some good insight into the awesome abilities of Steamer (LW's new 'volumetric' plug-in) in the last issue of LightWavin' . If you just tuned in though or were left hungering for more, this will be just the ticket.

Peebler is a capable teacher, having a good grasp of his subject and a facility for putting his explanations in everyday settings. His coverage of Steamer is detailed and clear. In this video as with many others of the latest spate, we're moving beyond re-iterating LW basics at every turn. This should be satisfying to those who have moved well past rehearsals of menu options, and yearn to get a handle on new and powerful functions.

Steamer is a VERY versatile plug-in, primarily offering utility in the areas of lighting, fog, and so-called 'steamy objects' (clouds, explosions, smoke and the like.) The tape is roughly separated into these segments, with fairly in depth review of the variables, simple examples, and more elaborate projects.

Where's All That Steam Coming From?

Peebler begins with thorough examination of Steamer light options. In the process we discern the nature of the relationship of the plug-in to Layout and the LW renderer. In turn, this equips the viewer to really comprehend what Steamer is doing behind the scenes. This could save a new user of Steamer no small amount of frustration. Also in the 'reduce frustration' column is the explanation of the correlation between Layout's Z-buffer data and Steamer's own functions (notably its internal preview.)

Render time is always an issue, never less so than when dabbling in the dark (and fuzzy) art of volumetrics. Along the way Peebler frequently highlights time saving alternatives. Believe it or not, halving the render time is not that difficult. Other time savers involve copy/paste ability, and fractal noise projection. Generally, Peebler takes the extra moment needed to display examples of varied settings rather than just whizzing by with a verbal comment.

Steamy Lights, a Dream Come True?

Could it be? Can years of 'faking' volumetric lights really be over? Sure, if you're not in a rush. You can trade in all your old, 'solid,' fractal-mapped spotlight cones for Steamer's wonderfully flexible and realistic volumetric lights. Then take a nice long holiday - you'll have the time, while your projects render! As elsewhere in life, real or virtual, compromises are necessary. While covering the conversion of scenes from solid models to volumetric, Peebler helps us consider the tradeoffs, pro and con. Other compromises revolve around the number of samples used by Steamer - another variable where less is more... up to a point.

After re-inventing the old standard 'Premiere' LW scene, Peebler illustrates the use of many of Steamer's settings within projects. He creates an illuminated underwater 'flyby,' and a simple but effective internally lit Jack-O-Lantern. The use of Steamer's internal envelopes to manipulate lighting parameters, and the ability to employ projection images to good effect with spotlights cap this segment.

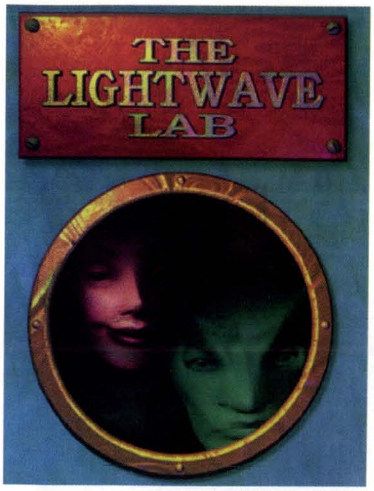
Steamy Fog - More Than Just Another Sauna

Fog? What's new about that? LightWave's had 'fog' for eons hasn't it? Sure, and politicians have been making promises for years too. Finally,

(Continued on page 44)

STEAMER
Thinning Out the Fog

Various frames from the video.



THE LIGHTWAVE LAB: VOLUME 2

by Steve Bowie

In volume 1 of this series, the authors taught the 'point-by-point' construction and detailing of a character 'face' model. Volume 2 responds to the demand to complete this project. Very seldom will we ever be asked to animate a face alone - what about the rest of our virtual character?

LW has permitted 'bodily' character animation for some time though the use of bones, parent-child hierarchies and IK. LW v.5.5 (with Morph Gizmo) and plug-ins like Puppet Master and Magpie have gone a long way to making this laborious process more accessible to the individual animator. It's still not easy, nor is it simple. LW Lab2 does a lot to de-mystify the process for new entrants into the realm.

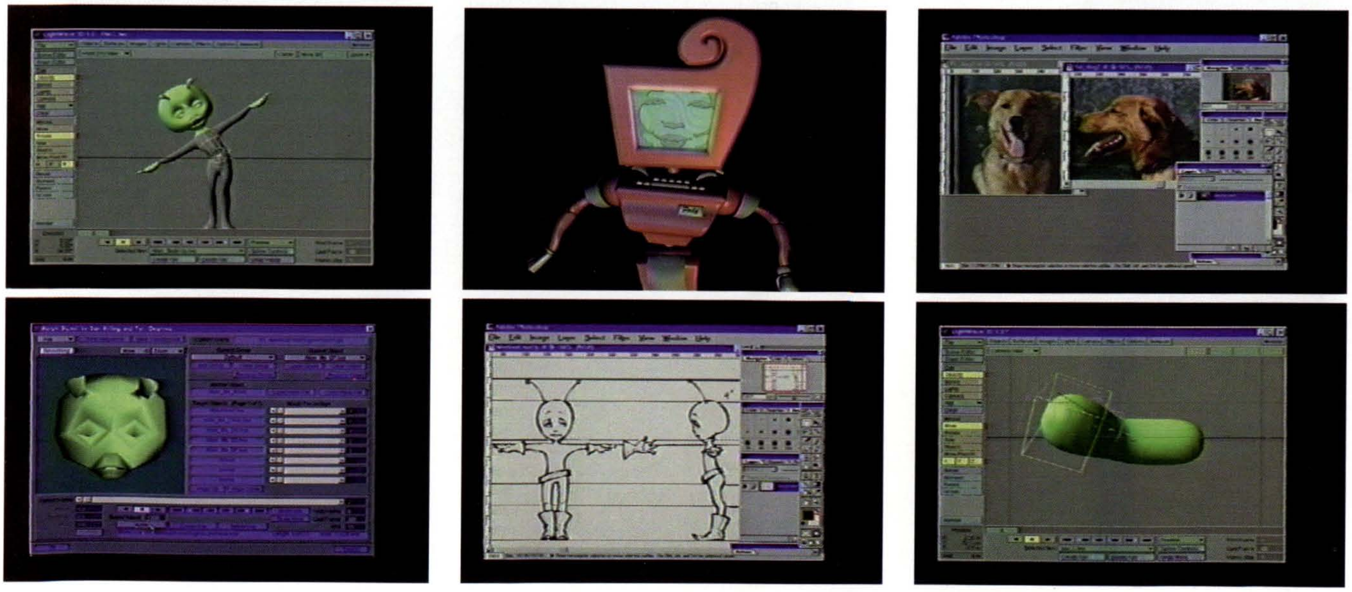
Of Mug-Shots and Canines....

V2 continues the process of character creation begun in V1. Before beginning the creation of our character however, narrator Ishida takes a side trip. In the previous volume, frequent recourse was made to background images used in Modeler as templates. Volume 2's segment (roughly 20 minutes long) called 'The Line-Up' explores this process a little further, using PhotoShop tools to enhance scanned images ("Nice Doggie!") to better serve the purpose. No scanner? Susan (...can I call you Susan?) has the answer to this quandary too, and even illustrates a great workaround for those using versions of LW that can't display multiple 'axial' backgrounds.

The Body Shop:

Point by point, polygon by polygon, our character emerges in Modeler. The second segment, 'The Body,' takes a little longer than a half-hour to view. In that short period, and using familiar tools no more complicated than 'Smooth Shift,' 'Mirror' and 'MetaNURB,' a reasonably useful little corporeal creation appears. LW's 'Knife' comes in handy in adding detailed form definition. While the object is kept fairly simple, it would be quite suitable for many purposes. That this can be done in such a short time is testament to NewTek's recent attention to character animation. The process demonstrated is quite

(Continued on page 40)



Various frames from the video.

(Character Shop - Continued from page 24)

you will almost certainly be wasting much of that effort. The same is true of the rest of the production process: storyboard, story reel, x-sheet timing, shot layout, rough animation, final animation, lighting, rendering, post-processing, and final transfer. Every step in the process depends on the ones preceding it. A mistake in a script that goes uncorrected until final animation can waste many hours and sink your budget.

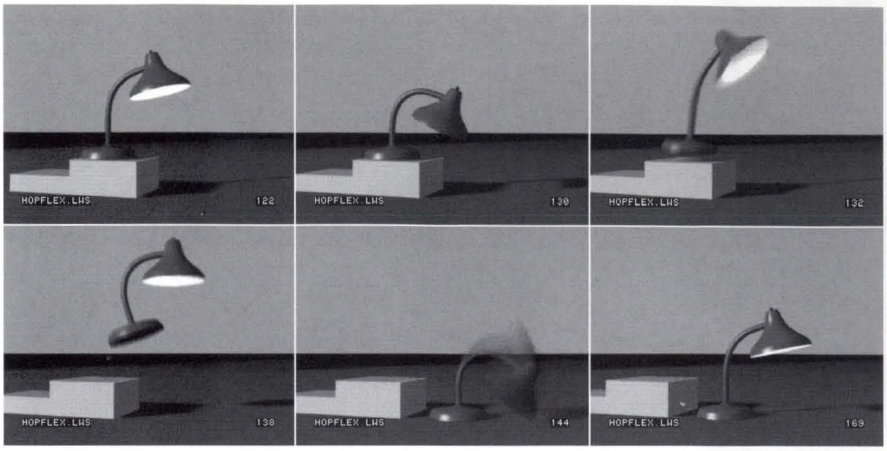


FIGURE 3 Frames from HOPFLEX.AVI.

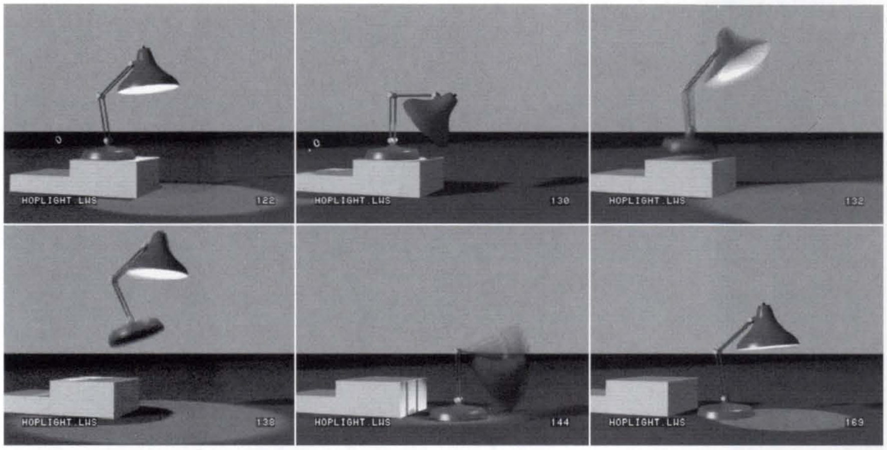


FIGURE 4 Frames from HOPSTRUT.AVI.

I Need Feedback People!

'Providing rapid feedback' means being able to make go/no-go decisions when a task is complete. This is one of the problems with traditional cel or clay animation that computer-generated animation can eliminate almost entirely. Traditional pencil tests have to be filmed, processed, edited and projected. They provide feedback with a 24-hour turnaround. You can render and play back full-color LightWave animations in a matter of minutes, and Previews even faster than that.

Feedback isn't limited to animation tests. If you design your character setups properly, you can rapidly test new character objects in existing animations. These tests can tell you if the object is going to work properly, or if it will have to be remodeled to eliminate creases, intersections or other unwanted artifacts. If the models' geometries are similar enough, you can simply use LightWave's Replace Object function in the Objects panel to swap the new object for the old. If the character's mesh has changed dramatically, you'll have to modify the setup to accommodate the changes. This can involve anything from reassigning a few Bones to a complete structural rebuild. I'll discuss some tips and labor-saving procedures for character upgrading later on.

Getting It In Writing

'Creating documents for decision-makers' has two purposes: to make your work more efficient, and to limit your risks. The first purpose is reason enough for you to habitually document your work. When you have a concrete document, whether script, storyboard, model sheet or x-sheet, you can concentrate better and spend less effort than if you were "winging it" from memory. When you get bogged down in the details of character animation, it's almost impossible to keep everything straight in your head.

When you're animating for a client, the second purpose becomes more important. Nothing can guarantee that you won't have to make major changes once you're in the later stages of production. Clients and studio execs are rarely noted for either their farsightedness or deep understanding of the production process. You can expect decision-makers to waffle and change their minds right up to the last minute (and sometimes beyond!) Commercial animations have, on occasion, been completed and paid for by clients, then trashed, never to see the light of day. The important criteria for your work strategy is to have firm, contractually binding approvals at each level of detail, based on the documents you produce. When the client signs off on the story reel, you need to be confident that you can go ahead with animating the shots according to the reel. A good contract will spell out how you are paid for each deliverable, including the script, storyboards, story reel, rough animation, and final animation. If you're doing post-processing work that should be included, too. If the client wants to make changes after they've already approved the work, they should pay you to do the work over. If it's not in your contract, you'll end up either eating the costs or having an irate client. When the client makes an expensive decision, you don't want to be the one paying the bill.

'Staying flexible' means just that: if your work strategy is too rigid, it's likely to snap on you someday. Don't get too attached to any part of the project plan. You have to be prepared to deal with the setbacks and roadblocks that happen to every project. Get in the habit of trying out alternatives. Experimenting with different approaches to typical character animation problems. When your usual approach doesn't work, you'll have a spare. You'll sometimes find an application for a procedure you never expected to use.

Strategy or Tragedy?

Let's look at some specific examples of work strategies and procedures that can meet these criteria.

Simple character setups meet most of the criteria for effective work strategies. They can reduce redundant work, support incremental detailing, provide rapid feedback, produce documents to share with your client or production team, and help you stay flexible.

Exactly what do I mean by "simple setups"?

A simple setup is one that has precisely the number of manipulable controls you need to pose the character - no more, no less. The desklamp in issue #4 is an example: two controls, one with three variables and the other with only one variable, but together adequate to animate the desklamp through the exercises. A more complex setup could have accomplished the same actions, perhaps by individually animating Bones in the lamp neck. This complex setup would have required redundant effort to animate, and a high level of initial detail in the model. It would also have made feedback slower, and ruled out many options for improving or changing the character's design.

Simple setups reduce redundant work by enabling you to re-use early animation tests each time the character models and setups change. It's not uncommon for professional character animators to report that 90% of their time is consumed by modeling and setup, with only 10% available for animating the finished character. This lopsided allocation is often the result of having to start the animation process over from scratch every time the character changes. If you can continue to refine and modify animation tests from the beginning of the project, you will effectively have more animation time. You will also feel more free to experiment, with the knowledge that anything you discover while animating an early setup can be applied to a later one with little additional effort.

There are a variety of approaches to simple character setups. I use one that I find compensates for most of LightWave's shortcomings while exploiting its strengths. I prefer to set up a character to be controlled by Nulls as IK Goals at one end of the hierarchy, and Parents at the root. With this approach, the details of the character's skeletal structure can change dramatically, but the controls can remain the same. For example, suppose you set up a Null as the Parent for a humanoid creature's pelvis or center of gravity, and two other Nulls as IK Goals for the feet. With the appropriate rotational limits in the IK chain, you can set up the legs to animate well simply by moving the feet goals. It doesn't matter whether the knee joints are normal human, bend backwards like a bird's, or have extra joints and odd proportions. Once constraints in the IK chain are set up to connect the Parent and IK Goal Nulls, you can change the details of the structure while using the same motion for the Nulls.

The Client's Prerogative (or Back to the Drawing Board...)

Let's take another look at the desklamp setup in Figure 1. Two Nulls control this character, one for the position and attitude of the lamp base, the other for the bending angle of the gooseneck. Now suppose I have a client who commissioned an animation of a hopping gooseneck lamp. Just before the final output to tape, he decides he wants a swing-arm lamp instead. If I'd used a setup of separate Bones and Forward Kinematics (FK) instead of Nulls and IK chains, I'd have to re-animate the whole sequence from scratch. Instead, once I've animated a complex sequence of hopping, bending and other actions, I can apply that animation to a different but like-proportioned swing-arm lamp, getting the same results. The number of Bones or Parented objects in the lamp's neck doesn't matter, just the IK Goal.

See Figure 1.

Take a look at Figure 2 for the swing-arm lamp setup. This was a simple piece of work. I used Replace Object in the Objects panel to substitute a salvaged desklamp base object for the original lamp. I then added a Parented object hierarchy to replace the flexible gooseneck with rigid rods and hinges, terminating in a lampshade object also salvaged from the original. I was able to make these changes very quickly. The setup was also an easy change, substituting the Parented object hierarchy for the original Bones hierarchy, with the same ShadeTarget null as the IK goal.

See figure 2.

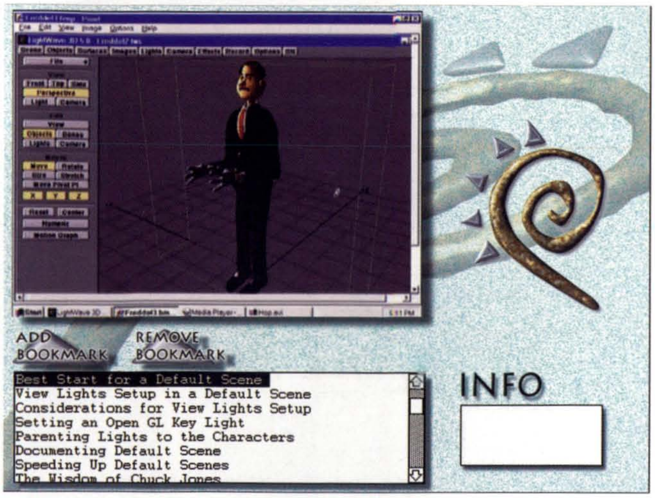
The only change I had to make in the animation was to exaggerate the most extreme Pitch keyframes for the PitchToBend null. The slightly different proportions of the swing-arm lamp required a slightly deeper bend to bring the lampshade edge down to ground level. This required me to make a simple change to six keyframes (out of a 182-frame animation.) It took about three minutes. You can compare the results of the two animations by playing HOPFLEX.AVI and HOPSTRUT.AVI from the LightWavin' CD-ROM. Representative stills from each animation are shown in Figures 3 and 4.

Animating with a simple, adaptable character setup like this enabled me to accommodate the whims of a (theoretical) client in a matter of hours, with minimal redundant effort and no loss in animation quality. On a real-world job, this could mean the difference between an acceptable profit and a major loss.

In the next Character Shop column, I'll discuss some useful tools and techniques for simple setups for not-so-simple characters. Until then, take a look at your own character setups. Try to find ways to simplify them. Exploit every opportunity to make your animation workload lighter, and use the time you free up to practice, practice, practice!

Doug Kelly is the author of 'LightWave 5 Character Animation F/X'. He can be reached via e-mail at kcc@apk.net.

PRODUCT REVIEW



Best Start for a Default Scene
View Lights Setup in a Default Scene
Considerations for View Lights Setup
Setting an Open GL Key Light
Parenting Lights to the Characters
Documenting Default Scene
Speeding Up Default Scenes
The Wisdom of Chuck Jones

LENY CD-ROM VOLUME 2

By Bohus Blahut

LENY 2 is a follow up to the set of CD tutorials which featured 'LightWave illuminati' Lee and Ken Stranahan (Steve Bowie profiled this set in LightWavin' #4.) LENY 2 features Doug Kelly (author of LightWave 3D 5 F/X) presenting a very complete look at character animation at a recent LightWave conference.

A CD like this is something that I'd always toyed with creating myself. My hesitation stems from compatibility problems I've encountered. The LENY CD put my heart at ease, as it includes all the support files needed for the PC (Win 95, or NT) or Mac. The install program adds several QuickTime resources to your hard drive, and includes a handy Uninstall program. Once installed, you'll find a LENY2 directory that launches the interface for the clips stored on the CD.

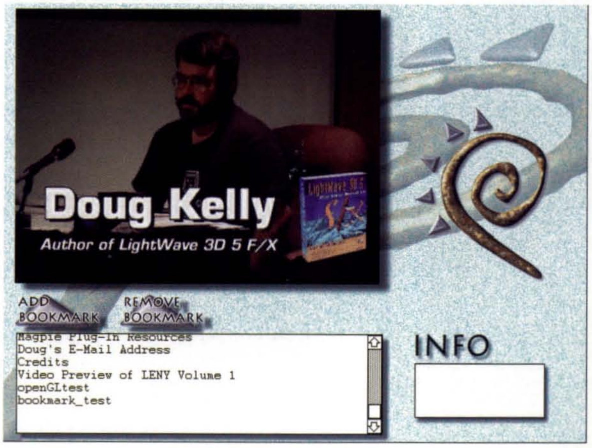
'Chuck' your VCR?

Your first choice is whether to immerse yourself in the seminar, or to view a 3D commercial (about LENY 1 and upcoming productions). The commercial shows a character kicking a pile of LightWave videos into the garbage! I don't know if it's necessary to trash training videos altogether, but the disc does make a good case for the CD-ROM as a tutorial medium. Though I won't be throwing out my VCR just yet, the CD has a surprisingly good picture. Computer based training also addresses another complaint. Many animators don't have a VCR/TV that they can see from their computer.

The CD 'struts its stuff' in a quarter screen playback window on your PC screen. Beneath the picture is an index of topics covered. Choose a topic, and zap right to it. This is great for immediately reviewing topics. Looking up some half-remembered point no longer requires looking for a video deck, and scanning to find the topic. Just slip in the disc, and quickly reference what you need to know. The CD also lets you set up and name bookmarks, adding these to your index list.

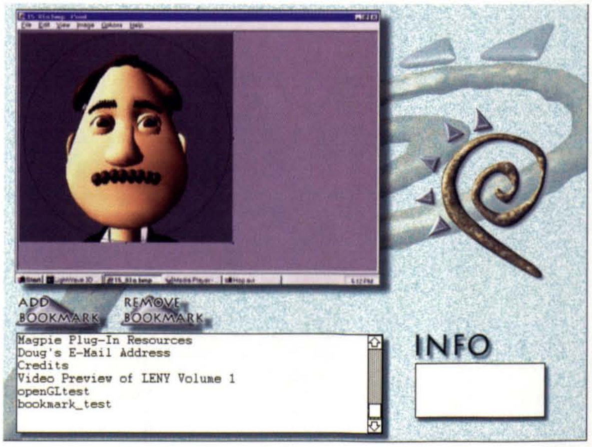
The LightWave logo on the right side of the screen isn't just decorative. These are the transport controls for the presentation - Play, Stop, Rewind, etc. It's here that I had the most problems with the disc. These controls were very unresponsive on my Pentium 100. The CD lists a Pentium 75 as being the minimum to run this disc - I shudder to think how things would look on a machine like that (more on this later).

Several cameras give various angles on Doug Kelly presenting fundamentals of character animation using LightWave 5.0. Throughout the presentation we get a medium shot of Doug Kelly, occasional screen shots from LightWave, or bold titles to emphasize certain points. While many of the techniques will apply to earlier releases of LightWave, you will probably ben-



Magpie Plug-In Resources
Doug's E-Mail Address
Credits
Video Preview of LENY Volume 1
openGLtest
bookmark_test

Screen shots from the video.



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efit more if you have the latest version. There are lots of character animation specific tools in LightWave 5.5.

Onscreen Action

Mr. Kelly has all the earmarks of a good instructor. His casual teaching technique inspires comfort, imparting the feeling that, while character animation represents much hard work, it's not out of reach. He has made himself available through the Internet, even offering to look over your work and offer tips. Throughout his talk, he peppers the discussion with pointers to specific reference material, electronic and otherwise.

Kelly nods to those who have come before us. He mentions Chuck Jones (one of the directors of 'Bugs Bunny') who said that 'we each have 100,000 bad drawings in us... best to get them out of our systems quickly, through lots of practice.' Similarly, Kelly muses we will have to create at least 100,000 keyframes to become good.

The presentation also takes a look at one time-saving utility, 'Lock & Key' - the LightWave utility that keeps your character's feet from slipping as they walk. Creating separate keys to keep the character's feet from 'skating' is intensely time consuming. Lock & Key makes short work of this previously arduous task, and Kelly shows you how.

THE K.I.S.S. PRINCIPAL

Mr. Kelly stresses the absolute need to simplify the steps of the animation process. This is important whether you work solo or are part of a team. He offers many suggestions regarding establishing studio standards, so that anybody can 'pick up' a character and easily start animating it. The object should already be boned, hierarchies set up, default lighting in place, etc. Kelly draws on the established practices of traditional 'hand-drawn' and 'stop-motion' animation, likening the use of null objects to the 'rods' and 'tie-downs' of stop-motion animation.

He often relates a point to working in an animation house, highlighting the importance of making your scenes and objects animator-friendly, with an overall emphasis on quality. Another parallel to the world of cel animation Kelly draws is the use of a model sheet - hardcopy documentation of your model with animator's notes (of paramount importance when working in a group). The experiences Kelly shares are invaluable to professional and beginner alike. 3D artists often fail to recognize the impact of cinema aesthetics, principals of cel animation, and even stop-motion. Mr. Kelly does a great job of putting computer animation into perspective.

Doug recommends the use of a LightWave model of an artist's miniature mannequin for practice purposes. Even an object this simple, he suggests, can be a very versatile and expressive character! He suggests that, to become a better character animator, you must become aware of how your own body moves. You can glean this knowledge through a study of acting, martial arts, etc. This can put you 'in tune with your body,' really hammering the idea of timing home.

Just Walk Away

Timing in itself is another very important theme of the disc. The most intricate character, with realistic IK deformation, will still look like it's moving through a tub of glycerin without good timing. This calls for careful attention to Snap, Ease, Anticipation, and more. You can't let the computer have too much control, warns Kelly. He illustrates modifying motion graphs to mimic mass and inertia. These are both important to achieving our eventual goal of realism.

If the animator walks away from this CD only learning one thing, it would be just that - walking. Kelly stresses the importance of having good walk cycles on a demo reel, and illustrates the best way to do it. Various IK tips regarding animating facial expressions are given, too. Further, he spills the beans on what animation studios are looking for. Armed with this information, his audience is empowered to create awesome animation, and dynamic demo reels.

Stop-Play, Stop-Play, oh darn...

It's easy to see that this disc is chock full of information. It's worthy of multiple viewings, and in-depth study. I'm left a little disappointed by the experience of watching" the CD though. I tested it on a Windows 95 100mhz Pentium, with a 4x drive and 40 megs of Ram. While this may not seem like much as a LightWave renderer, it should at least be able to play back this CD just fine.

The playback area of the screen provided a frame every second or two, and while uncomfortable, I grew accustomed to it. All the screenshots came up at the right time, and were clear... that's really important. The real problem was with the transport controls'. When I wanted to change topics it took fully a minute for the disc to amble to a stop - if it did. There was no real feedback that the CD was actually stopping. The tendency is to push the stop button repeatedly - a bad idea, since the stop button also toggles play. It's really easy to send the playback program a bunch of 'stop-play-stop-play' commands, never getting the CD to actually stop. I don't know if my machine is to blame, or whether there's some room for improvement in the next volumes in this series.

The disc comes with a ton of sample objects and scenes, allowing you to follow along with the host. You're supposed to be able to launch LightWave from the LENY interface, but I didn't find it to work. If it did work, I don't know how one would flip screens between LENY and LightWave while keeping everything straight. I wonder if a future version could open up as a little window on top of the LightWave interface, allowing you to work while looking up reference material.

I also wish that there were some AVI or QT examples of the animation techniques that Kelly discusses. The examples that are part of the CD presentation don't animate especially well on my machine for the reasons that I've mentioned. Learning character animation requires much study, especially including the work of other animators. I'd find a profile of Doug Kelly's work very valuable.

Overall?

Overall, I think the disc is great. Kelly's insights outweigh the technical squabbles that I had, though they do interfere with the learning process. While the disc does teach how to animate a character, it doesn't say a whole lot about building the character. I imagine that this is between the covers of Kelly's voluminous reference book LightWave 3D 5 F/X, from Ventana publishing. The disc shows some coming attractions in the LENY series, and the topics look awesome. If they follow the template that Doug Kelly has laid out, you'll have many of the conceptual tools to become a talented animator in no time.

MSD - 928 Broadway - NY, NY. 10010
888-MSD-NYC1
Leny 2 $79.95
www.msd-nyc.com

Bohus Blahut owns and operates The Vantage Point, an editing, special effects, and 3D company. VP has recently released a tutorial video covering advanced techniques in ImageFX. Contact Bohus via e-mail: bohus@xnet.com.

(Realitools Review - Continued from page 13)

He left the plug-in in the package in case a future version of Vista Pro allows the data to be imported. While this utility is only useful to Vista Pro owners, those who own the program can take advantage of being able to work out camera moves there, and then import them into LightWave. This could be handy when attempting to re-create an animation with a more detailed LightWave rendering, for example.

Have you ever wanted to parent a Bone to an Object? The Parent To Object plug-in does just that. It's assigned in the motion panel, where you pick the object you want the bone parented to. A little experimentation is required, but the plug-in will let you perform some interesting deformation tricks very quickly.

Realitools also comes with an object replacement plug-in. You pick an object, choose which axis will control the replacement function, and wherever the object is positioned on that axis, the program will load the correct object. So, for example, if the controlling object is set to watch the X-axis, and it's moved to unit 30 on that axis, the plug-in will load the corresponding replacement object.

Want To Make BAD Video?

The package includes a couple of Image Filter plug-ins. There are two that simulate Video Lines and Video Noise. You can control the type and width of the lines, as well as controlling how much darker or lighter the image gets under the lines. Video Noise lets you control the axis and amount of noise, and whether the noise has color. The plug-in even lets you control the noise with another object, allowing you to create animated static. If you've ever wanted to re-create lousy TV reception, these plug-ins will be very useful.

The other image processing tool is a Brightness/Contrast plug-in. Using a reference object (like a null), you can control the percentage of Brightness or Contrast adjustment applied to your image when it's rendered. If you want a constant rate, that can also be set up. You can use this plug-in to automate fade up/downs in an animation.

Differing Viewpoints...

The final set of plug-ins are surface shaders. There are plug-ins that let you render Front/Side/Top views, and one that will render an Orthographic view. These plug-ins are a little confusing to set up and work with at first, but once you get used to them it's easy. For those who have complained about the inability of LightWave to render anything but a camera view, these plug-ins should fix that. There's also a plug-in that will help you create QuickTime VR panoramic views.

If you have ever wanted to improve the quality of your LightWave renderings, the next group of plug-ins will interest you. First-up is a Soft Reflections plug-in. In the real world, most surfaces are not perfectly reflective as they often are in 3D renderings. Currently in LightWave, you can simulate this effect by using bump maps and anti-aliasing, but it's not the best solution. This plug-in will allow you to set up soft reflections on a surface, with the ability to adjust the blur angle, number of samples and the falloff.

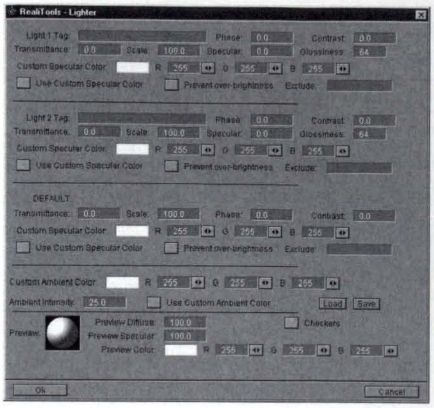
Shadow Magic

When compositing LightWave objects with real images, it's a real pain to get the shadows to look right. It often takes many parameter adjustments and test renderings before you get the look you want. The Shadow Blend plug-in greatly simplifies this process. You can control the light intensity and the minimum shadow intensity of your rendered shadows. You can even set the shadow color of your shadows to match the color of shadows in the background image. This plug-in is very easy to use, and produces very nice results. You'll wonder how you ever did any compositing work without it!

Realitools also comes with a Fresnel shader. Setting up a surface with Fresnel properties lets the properties change as the viewing angle changes. A reflective object with Fresnel shading, for example, will show a different amount of reflection if it's viewed from the side as opposed from the front. The plug-in lets you control Diffusion, Luminosity, Specularity, Transparency, or Reflectivity attributes of the object. You can control the percentage of the Fresnel effect applied to the surface, as well as setting the Glancing (edge-on) and Normalized (face-on) values. Further, you are able to adjust the contrast and bias between the two. There is also a Surface Blend parameter, where the opacity of the shader can be controlled by the amount of the Fresnel shader. Using this shader will add a lot of realism to your renderings!

Lights On, Pencil Ready

Another portion of the package is a new lighting tool, called Lighter. You can control the position of light termination on the object, as well as how soft or sharp it is. You can set light to transmit through a surface, and have much more control over Glossiness and Specularity (including setting a color for specular light). You can also limit the brightness of an object, or exclude lights from objects. The plug-in lets you use these effects on groups of lights. You are permitted two groups of settings in one scene, along with normal LightWave lights. There's also a preview sphere on the interface so you can check your settings. This particular plug-in has a whole lot of options, and will take some experimenting to get used to it. The results are worth it, however, as it's possible to greatly improve the look of your images.



Light 1 Tag: Phase: 0.0 Contrast: 0.0
Transmittance: 0.0 Scale: 100.0 Specular: 0.0 Glossiness: 64
Custom Specular Color: R 255 G 255 B 255
☐ Use Custom Specular Color ☐ Prevent over-brighness Exclude:

Light 2 Tag: Phase: 0.0 Contrast: 0.0
Transmittance: 0.0 Scale: 100.0 Specular: 0.0 Glossiness: 64
Custom Specular Color: R 255 G 255 B 255
☐ Use Custom Specular Color ☐ Prevent over-brightness Exclude:

DEFAULT
Transmittance: 0.0 Scale: 100.0 Phase: 0.0 Contrast: 0.0
Custom Specular Color: R 255 G 255 B 255
☐ Use Custom Specular Color ☐ Prevent over-brightness Exclude:

Custom Ambient Color: R 255 G 255 B 255
Ambient Intensity: 25.0 ☐ Use Custom Ambient Color

Preview: Preview Diffuse: 100.0 ☐ Checkers
Preview Specular: 100.0
Preview Color: R 255 G 255 B 255

The final plug-in is a Pencil Shader, which will color an object or image as if it's been drawn by a pencil. You can control the line color, the contrast of the scratches and the image, as well as whether you want to use antialiasing on the lines. Besides using this on renderings, you can also use this plug-in to shade any image. While it is an interesting effect on stills, it really shines when used on animations. You can really get a nice "hand drawn" sketch look with this plug-in. It is very impressive!

Where's The Text?

While the plug-ins themselves are good, the accompanying documentation is not as good as it could be. It's often short, and needs a lot more depth. There are tutorials, but most of them are also too short. Also, tutorials need to be included for all the different functions of the package. The Lighter plug-in is the most complex item in the package, yet has no tutorial - not great. Since the documentation is on-line, perhaps registered users will be able to download expanded materials later.

Aside from the documentation, this is a very good package! There's a lot of variety, with the plug-ins ranging from simple utilities to more complex programs. The cost is more than reasonable, considering the number of tools you get with the package. The various lighting and shading tools are worth the price of the package by themselves. I recommend Realitools to all LightWave users.

Dynamic Realities
1900-A-Pewaukee Rd.
Waukesha, WI. 53188
800-944-5520
Realitools Intel & Mac $150 / Alpha $250 / SGI & SUN $750
www.dynamic-realities.com

(Plug-in Video Review:
Continued from page 30)

you should have no difficulties getting going with it. Watch this and save yourself a whole lot of manual reading!

Wave Filter Net-Plus

About a quarter hour is given to discussing this post-processing LW add-on. This may not seem like much. It's sufficient to the task, but I'd have been happier with a more in depth probing of the relationship and contrast between LightWave's own internal tools (Antialias and DOF for example.)

WF's features are each demonstrated, if a little breathlessly. Animated examples of the dynamic parameter adjustment it permits make the discussion easy to comprehend. The superficial use of nulls to delimit post processed effects becomes quite clear once seen, and seems a lot less unnatural to me after listening to Peebler's explanation. The ease with which a pseudo rack-focus shot can be created is a good example of the facility offered by this method of keyframing parameters.

Some of the more esoteric functions, such as color filtration, are tidily put into a functional realm with simple examples of their practicality (if I said more, you wouldn't need to see the tape, now would you?)

Pulling the Plug

It would be easy (and wrong) to pass over this tape as an example of crass merchandising. The nerve! Asking us to 'pony up' to watch an hour and a half of commercials! Take this view if you like, but I'm not. I can't afford to run out every week and pick up the latest rage in often apparently overlapping plug-ins; and, strangely enough, there don't seem to be too many LightWave exhibitions up here in The Great White North!

Also, videos like this one have me (finally, and reluctantly) taking a hard look at moving LightWave over to the PC. Seeing the raw horsepower and profusion of related products available to make my life easier and more productive is really tempting.... which reminds me: it might be wise to entrust your credit card to someone with firm resolve before sitting down to watch this video. Viewing it produces an overwhelming urge to 'be good to yourself.'

One assumes that (given Brad Peebler's role there) in part this tape also represents NewTek's 'kinder-gentler' support policy toward third-party software producers - hooray! About time! If you're acquainted with the plug-ins already, or you're a dedicated LW purist, I guess this tape is of no use to you. Otherwise, it just might fill your need. Even after anteing up the $49.95, it could save you money in the long run!

Desktop Images
611 North Orchard St.
Burbank, Ca. 91506
800-377-1039
LightWave 3D Plugin-In power $49.95
www.desktopimages.com/desktop/

(Liquid Metal - Continued from page 11)

exactly like mine. So just tweak the position of the floor object to get the nice globule look. See figure 4 for globules in motion.

Ripples are optional, but can be applied in two ways. You can use a simple ripple bump map texture on the whole object, with the following figures: Standard size of 1x,1y,1z, 20% amplitude, 1 source, .1 wavelength and .0025 wave speed. This works well, but does not show ripples generated by the actual impact of globules on the center globule. To do that, I recommend you use the plug-in 'Surface Effectors' when creating the disc animation. Just parent a surface effector affecting luminosity to each moving disc. Set it up so that the Min (child effector) size is a bit larger than the Max (child effector) size, to provide for a circular band. When a disc hits the center disc, move the Min/Max effectors so the dark circular band appears, then grows outward until it disappears. Using this technique, the impact ripples can be simulated. Use more effectors for more ripples. Tweak them to affect the luminosity less each time to mimic weakening ripples. You can even get 'ripple bounce' (as though the ripple bounces back when it hits the opposing edge of the luminous discs) by properly keying the movement of the Min/Max effector nulls.

As an added touch, I recommend placing a live image sequence on the globules as they form the object. For 5.0+ users, the option exists of layering semi-dissolved image sequences. For 5.5 folks, scrolling images can be added across the object as it forms. This 'flows' along the actual displaced surface to enhance the curvature of the globules as they amass. I added the final "Smooth Zone" text by scrolling it as a bump map (using the reference null) before the final morph into the smooth zone logo.

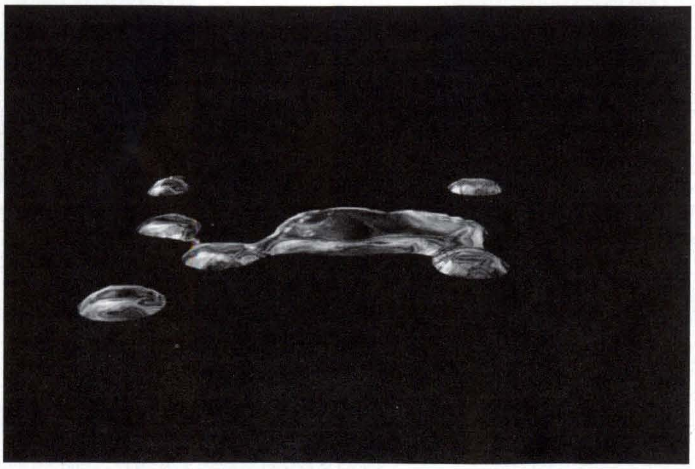


Figure 4

Ancel Bhagwandeen is a 32 year old Industrial Engineer. He runs an Animation/FX company (Advanced Digital Dreams) in Trinidad, W.I. Ancel has been a LightWave animator since the inception of the Amiga 4000/Toaster 4000, back in 1993. Advanced Digital Dreams is now Pentium II/NT based, and supplies LightWave Animation, Ultimatte compositing, morphing and nonlinear editing. Its work has been aired on the Travel Channel and the regional CVN music station.

(LightWave Lab 2 Video Review
- continued from page 33)

simple, and it's also very versatile... it's hard not to get swept up in the thrill of 'creating' as you knit together a little 'being.' The 'Puppet Master' plug-in (available for Alpha/Intel/Amiga @ $399/349/199. SRP) is going to be used later as the primary 'energizer' of our character in Layout, so Ishida pays particular attention to creating a PM-friendly character.

Much 'clerical' effort is involved in character animation, and using rationalized conventions in surface and object naming helps a lot. Still, once you've seen the methodology applied all the way through to one set of fingertips, it's difficult to keep your finger away from the FastForward button! The tedium does serve to warn one not to skimp when estimating the cost of this kind of project! That it's possible to do this in near-realtime on the tape at all is amazing.

Laying it All Out....

With our complex object loaded in Layout, the fun begins. We learn of the need to adjust pivot points and add nulls to the IK chain - then we can set up 'shaper' and 'target' objects for use with Metamation. A few simple experiments get us moving in both PM and Metamation and once up to speed we return to our complex project. There's no getting around the fact that it's a ton of work, but the results are terrific! Metamation and PM complement each other wonderfully, and LW Lab2 clarifies the relationship nicely, while adding lots of useful tips along the way... and that, as they say, is IT! Our little guy is ready to go....except...he's...

Speechless in Seattle...

... or Tacoma, or Kalamazoo for that matter. Lip sync is tricky, and when poorly done can absolutely wreck the effect you're shooting for! While not exactly 'LightWave' tutorial material, or at least not exclusively so, the next segment (Joe speaks!) shows how painless the process can be using easily accessible (and affordable) tools on a garden variety PC.

Clasen shows off the use of a cool little sound sample tweaker called, oddly enough, 'Cool Edit (Registration $25/50 from Syntrillium www.syntrillium.com) The neat thing about this little app is it's film/video friendliness - it cheerfully displays the sample in a variety of frame rates, making for a nice handshake with our favorite animation program.

Having 'tuned up' the voice part of the project with Cool Edit, Joe moves over to Magpie (see thirdwish.simplenet.com/magpie.html) to create his exposure sheet... man there's some great software available! Magpie allows precise pre-visualization of mouth positions while playing back the audio clip, and just to make it a must have tool, adds the ability to save out a Morph Gizmo file! Naturally, after demonstrating this facility it's off to....

'Gimzo, Gizmo'... what's in a name?

The age long question having been decisively answered ('Dammit Jim, I'm a Gizmo, not a Gimzo!') we can now press on to enable LightWave's experimental features. Invoking Fori's 'Gizmo' (which boasts WAVE playback too) takes our audio/anim project to completion. A brief tour here caps our trip into the character realm and proves all the effort was worth it... by the time you reach this point you're 'over the hump'. A little tweaking of facial features and we're done!

LW Lab, or an Evening Out?

Forty bucks give or take - that's a pretty cheap date (especially if you need a baby-sitter!) - so.... which is it to be? I guess if your date is Cindy Crawford, you might have little difficulty in deciding. For the rest of us (esp. those with pocket protectors) you might want to consider getting your best girl or guy to take a raincheck. This tape is well worth the price of entry.... and it won't dump you and go home with someone else, not for almost two hours anyway. Painstakingly (maybe a little too painstakingly) thorough, clear and concise, topical and accessible, LW Lab2 is a good value. It'll have you hitting those websites for info on the ancillary programs real quick too! Niggles? Very few - I'd like a 'crib-sheet' with indices to the various topics, and I don't think I'm alone in wishing for a little instant gratification in the form of an included floppy with .lwo's on it, but nobody else does this either (hint, hint!)

Joe's Desktop Bar & Grill
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(Tectonics - continued from page 21)

threaded object.

Start by loading the bottle object from the LightWavin' CD. You'll notice that there are objects in both layer one and layer two. Layer one is the bottle object, while layer two is the thread profile.

Lets begin by going to layer two. We are going to lathe the profile that is there. Press (Shift L if you have LW 5.5) or go to the Multiply menu and select Lathe, then press (n) to bring up the Numeric requester. Enter the following:

Start Angle = 0
End Angle = 720
Sides = 150
Offset = 5.5 mm
Axis = Y

Click OK to lathe the profile. Looks pretty good so far, huh? If you want to take a look at the threads thus far, hold down the shift key and press number "1" on the keyboard. This will select both layer two and one as foreground layers. Using the OpenGL preview you can take a look.

Unfortunately, there's a problem with the threads the way they are right now. When you look at threads on a real bottle, like this hairspray bottle, you will notice that the threads smoothly blend in with the neck of the bottle. So how do we make the threads on our object do the same thing? Easy, you simply take the end polygons of the thread and rotate them with the following steps:

Press number "2" on the keyboard to select layer two by itself again. Now select the uppermost end of the threads (figure 4). Press (y, for Rotate) then (n, for Numeric) and enter these values:

Axis = Y
Angle = 91
X = 9.7322 mm
Y = 0
Z = -9.2847 um

Click OK to complete your entry. Next, select the top most corner point of the thread end (figure 5). Now we need to move the point to complete the thread transition. Select Move (t) then (n, for Numeric) and enter this value:

Y = -622.8818 um

That's it! You now know how to create perfect threads. Before you get too excited, let's complete the other thread end. Repeat the steps above with the following values:

Rotate
Axis = Y
Angle = -91
X = 9.7322 mm
Y = 0
Z = -9.2847 um
Move
Y = -622.8818 um

Great! If you have followed the steps correctly, you should have a threaded bottle that looks like figure 6. Here's a tip: I deleted all the inner polygons of the threads, the ones that lie against the neck of the bottle. Next, I applied the surface "Threads-Smooth" to the threads (remembering to turn on the Smoothing option) and applied the same color attributes as the bottle to the threads. Then I copied the threads to the first layer, and saved the completed object as "Bottle.lwo."

WRAPPING UP

Well, that wraps up another issue. If you have any questions or comments, let me know. Also, if there is something you would like to see covered, let me know. In the next issue we will completely model and surface an object. Until next time, thanks for reading, and good luck in your modeling adventures.

Kyle A. Thatch is President of MAGI Imaging, a Louisville, Kentucky based 3-D Animation and Post Studio. Kyle can be reached for comment at:

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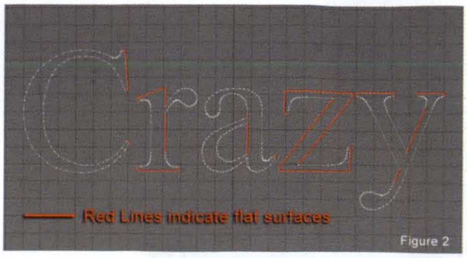


Figure 2

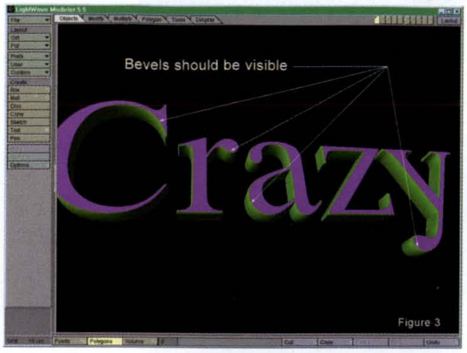


Figure 3

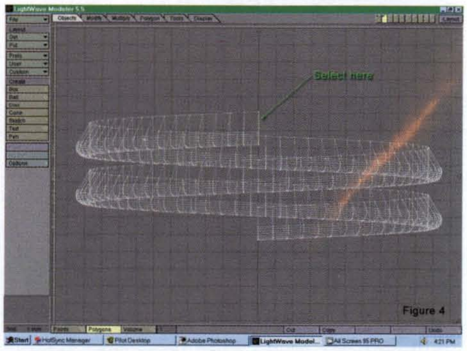


Figure 4

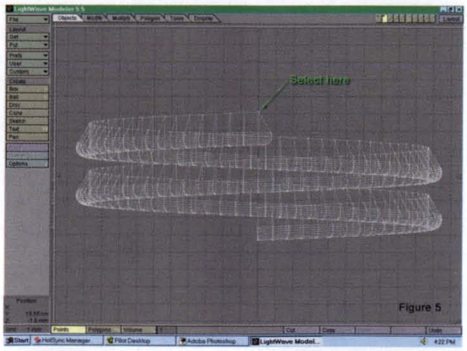


Figure 5

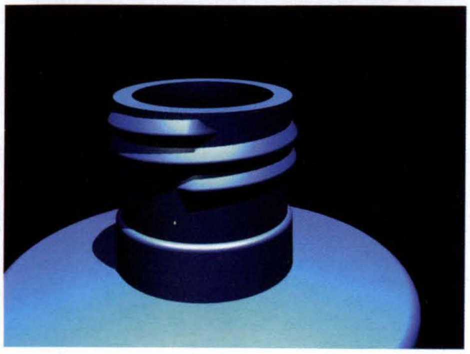
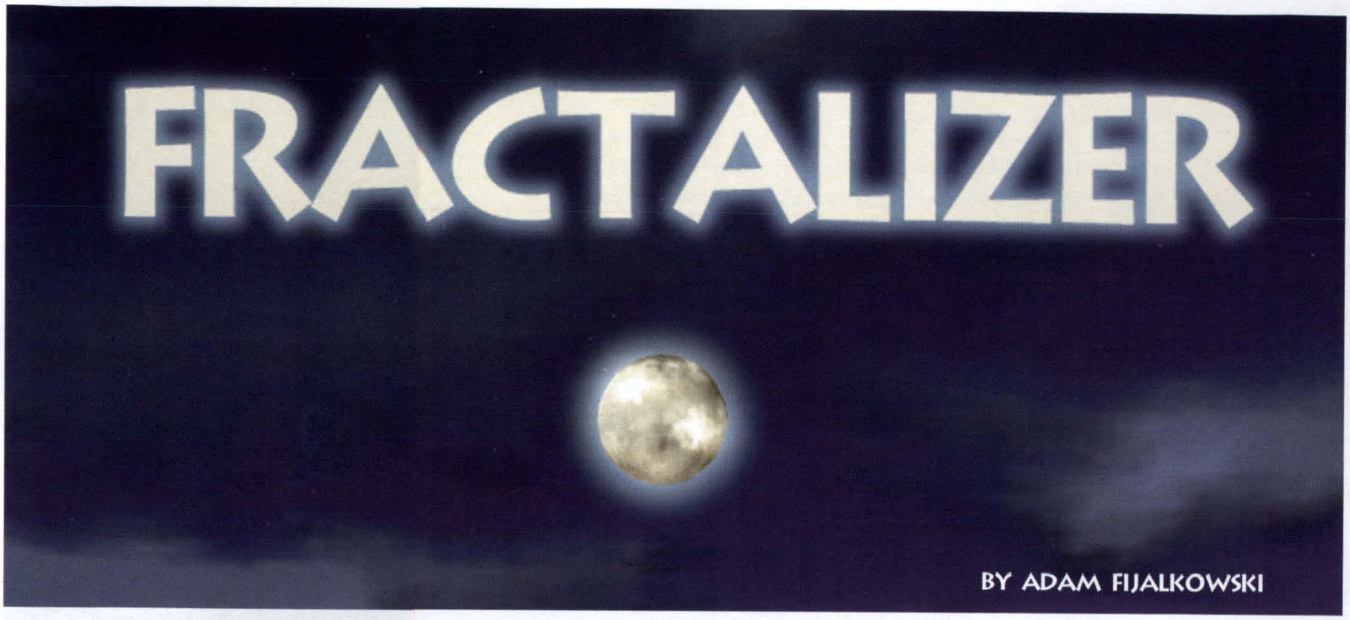


Figure 6



FRACTALIZER

BY ADAM FIJALKOWSKI

'Fractalizer,' a new LightWave noise plug-in, will soon be released by Dynamic Realities. It offers a five color spectrum in the Color channel; five value spectrums in the remaining Luminosity, Diffuse, Specularity, Transparency and Mirror (Reflectivity) channels; advanced Falloff controls; Opacity fractal for each channel; and animatability of all options. These features make Fractalizer extremely flexible and easy-to-use. Below are several examples of practical uses that will certainly be timesaving and handy. These are only the most useful applications, as this presentation is not aimed at exhausting Fractalizer's capacities. My objective is to acquaint you with its operation, and inspire you to look for new, yet undiscovered solutions.

Fractalizer surpasses LightWave's native Fractal Noise routines, in that its spectrums make it possible to create multicolor, or multi-value, fractal clouds. This option was used in most of the examples below, including the 'lightning' and 'morning sky.' Fractal Opacity allows application of a fractal texture over an existing texture without covering it. Its operation is best shown in the 'rust' image. Fractal morphing (used to create the explosion presented in the documentation) enables animating the fractal on the texture, that is morphing one fractal into another on one surface. This can be used to animate a bonfire burning out, with pieces of wood or coal getting lighter and darker in different places, or a meteor getting red hot and burning while entering the atmosphere.

Unlike LightWave's falloff, Fractalizer's 'Advanced Falloff' has the option of determining a solid 'core radius' within which the texture is constant. Its applications are numerous - in this article it was used to produce the rust patch effect. These are Fractalizer's most outstanding features. Let's consider some things you can make with them.

SKY

Here's how you might set up a Fractalizer sky surface: the cloud size will depend on the scene size and settings. In the Surfaces Panel, set the surface color to the color you wish your clouds to have. Transparency should be 100%, so the background sky is visible beyond the clouds. After launching Fractalizer, only the Transparency channel is activated. The texture size should basically be the same as the required cloud size. So far, the effect is not very realistic - the sky is uniformly covered, with clouds covering about half its area. To overcome this, use Opacity Fractal to double the fractal size in each direction. As the texture transparency has been set to 100%, application of Opacity Fractal results in the clouds now covering more or less one fourth of the sky. Setting smaller cloud size (by changing the Transparency spectrum) would also reduce the cloud coverage, but using Opacity Fractal produces a much more

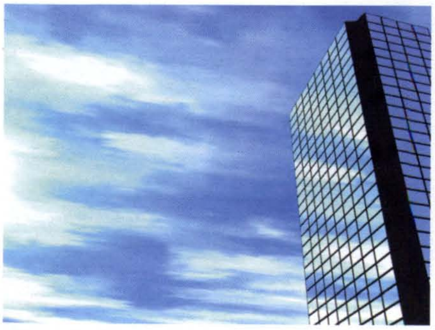


Figure 1

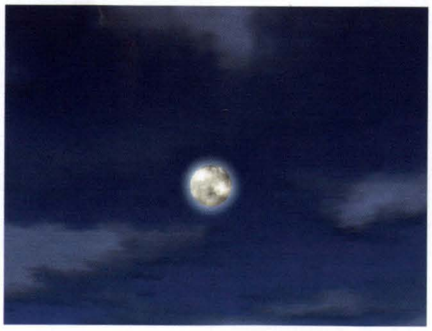


Figure 2

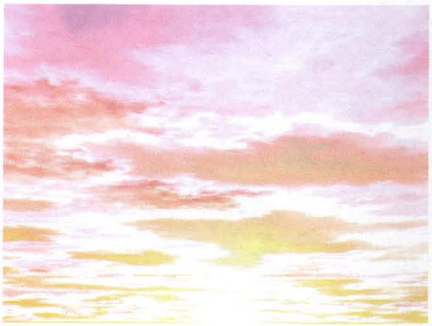


Figure 3

realistic effect. For the cloud edges to be naturally jagged, set Fractal Depth to 5 bits and turn Continuous Random on.

For a less sophisticated way of producing the sky, see the documentation. Unlike LightWave's 'Skytracer,' Fractalizer is capable of reflecting the sky in all kinds of mirror surfaces. This can be seen in figure one.

For this effect, use a rectangle for the sky object and load an object with a reflective surface into the scene. In this example, it's a skyscraper with glossy windows - but you can also reflect your sky in water, car bodywork, sunglasses and the like. The sky texture is basically the same as described above, except that the same fractal used in the Transparency channel was applied in the Diffuse channel, with diffuse values set to more than 100. This is to make the clouds very bright.

The night variant of sky is produced in a very similar manner. The Diffuse channel settings are the same as those of the Transparency channel, with the texture center shifted along the Z axis to produce clouds that darken at the bottom. Remember that the Diffuse values should be low (less that 100) otherwise the bottoms will be lighter. The moon surface was also made using Fractalizer. The Luminosity and Diffuse channels were applied to the surface of a ball object. Fractal depth in both channels was set to 4 bits, and (in LightWave's Surfaces Panel) Sharp Terminator was activated. See figure 2.

At sunrise the sky has a much more dramatic appearance than during the day. See figure 3.

Fractalizer is capable of rendering such effects using the Color, Luminosity and Diffuse channels. First, in the Color channel set the color spectrum extreme parameters to the following values:

R = 255, G = 177, B = 215
R = 210, G = 243, B = 255

This will give you light rose and light blue. Activate 'Continuous Random,' and set Fractal Depth to 7 bits. Texture size should fit the size of the object. Fractal settings are the same in the Luminosity channel - the spectrum is set as follows (three rows are active):

Value	Position
0	0
95	50
0	100

This will produce brighter cloud edges. To make the bottoms of clouds lighter than their tops (as the rising sun illuminates them from below), shift the texture center in the Diffuse channel along the Z axis. This is the same trick used with the night sky image, except that the Diffuse values are set above 100, making the bottoms lighter. The Transparency settings are the same as those for Luminosity. The spectrum is as follows:

Value	Position
100	0
0	63

LIGHTNING

In the stormy sky with lightning presented in the Lightning animation (see CD), the night sky described above served as background. To produce a sky covered almost entirely with larger clouds, the Transparency spectrum settings were adjusted:

Value	Position
100	0
0	25

These clouds were animated by simply applying texture velocity. The lightning object is a rectangle, and the scene arrangement is as follows: (see figure 4)

The night sky is blue, and the lightning red. The trick of making a realistic lightning bolt consists of creating a thin stripe of bright color in the Luminosity spectrum. It is set like this:

(Continued on page 48)

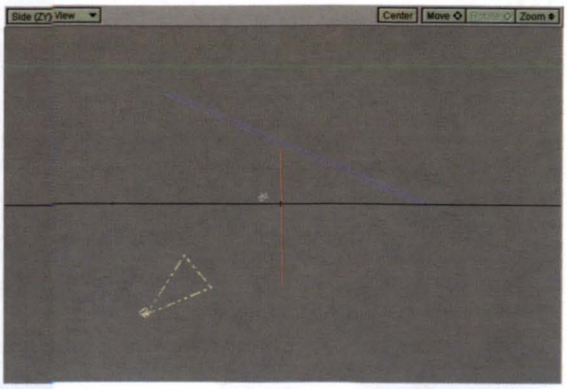


Figure 4

Figure 5

Figure 6

Figure 7

(Organic Modeling Video Review - Continued from page 31)

As it's done in OM&A, we are 'treated' to what I suppose is a trip through an inter-dimensional tunnel, à la Sliders. Unfortunately, this basically red-toned, fractal noise mapped swirl is just a bit too much like a hi-speed blast down someone's esophagus for me.

Meanwhile, back at the gumline, we get a pretty good overview of finishing off this often overlooked area. In the end, we are staring down the throat of a pretty decent sand-worm... Dune sequel anyone?

Want To Be a Technical Director?

Fori's Puppet Master being 'de rigeur' these days for character animation, it plays a large part (about ten minutes) in OM&A. Lombardi demonstrates the basics of anchor and control objects, section files and so on, leaving us largely prepared for the more complex job at hand. He covers the importance of 'order of operations' in preparing a scene with PM, and touches only very lightly on the matter of relocating pivot points. Since PM does not have the same built-in 'muscle-flexing' function as LW's native bones offer, we're offered a workaround.

LightWave's ability to use a variety of plug-ins concurrently or sequentially is a great asset, but can be confusing to set up. We are taken next into a discussion of setting up the same scene for Metamation - using Metaform Plus, setting up Shaper and Target objects and integrating them into the project.

Mixing It Up... IK, Bones, Giz and PM:

Lombardi moves along swiftly... the time flies by, and soon we're learning precisely how to make a sand-worm chew up a victim and, ummm... swallow. By this point we're really 'mixing it up' - using Bones with Morph Gizmo to get realistic tail and head motions.

In the spirit of using everything available to attain realism, IK is added to 'Giz,' 'PM,' and Bones. Setting aside our sand-worm, Lombardi pulls a T-Rex out of a hat and takes us through the process of creating a fairly impressive walk cycle in a matter of minutes, using only 3 Nulls! We see the use of full time IK, and learn (quickly) how to establish and set natural rotation limits for Inverse Kinematics. Lastly, that oft-neglected matter of 'locking down the toes' is dealt with.

What's Left For Next time?

Looking back, there is a lot in this tutorial. It takes us from square one to end product. Overlooked, and perhaps suitable fodder for another tape, are detailed surfacing techniques, and a more in-depth discussion of creature motion considerations. Lombardi does a skillful job of simplifying matters, and manages to impart a fair level of confidence-building information. It might be worth noting that much of the material in this tape covers the same ground as does the 'LightWave Lab volume 2: characters' release, from Joe's Digital Bar & Grill. The primary differences in material between the two? LLv.2 covers audio extensively, while OM&A spends more effort on IK. Remember that when deciding between the two.

Desktop Images
611 North Orchard St.
Burbank, Ca. 91506
800-377-1039
Organic Modeling Video $49.95
www.desktopimages.com/desktop/

(Steamer Video Review - Continued from page 32)

Steamer Fog is, well... it's fog! There have been lots of imaginative workarounds over the years but, really, there's no comparison. None. Still, Peebler gives us a comparison of LightWave's standard fog, and the volumetric variety. In a nutshell, setting up a scene that includes traversing non-volumetric fog *convincingly* is difficult, if not impossible. With Steamer, it's a delight, visually and creatively.

Along with the dissertation we get useful explanatory comments that dispel any lingering 'fog' (sorry, I couldn't help myself.) As well as it's natural application to landscape scenes, less obvious applications are also suggested - such as creating a red-hot lava flow using fog.

Steamy Objects of Another Kind -

If lava isn't hot enough, Peebler moves on to a thorough examination of the use of 'steamy objects' to create an explosion. This provides opportunity to consider the relationship of particles to Steamers functions, results and placement. Again, sample count is an issue. Also of technical interest as well as practical value is the importance of careful placement of Steamer (which itself is a pixel-filter) in the plug-in hierarchy, to avoid problems. Can't say I was really 'blown' away by the visual quality of the resulting explosion (I hate it when I'm corny, really - it's an obsession) but it's a start.

The use of dedicated lights and super-charged parameter values are described, and many of Steamer's finer settings are tweaked to perfect details. As a final concrete lesson, an atmospheric 'fireball' project is undertaken. About ten minutes worth of exploration goes into this effort.

Are You Getting Steamed?

If you've not had an opportunity to work (or play) with Steamer yet, this tape will get you going in short order. The sheer beauty of the possibilities, and the range of practical applications make it mandatory to get 'up to steam.' While it's quite possible to pick up Steamer usage without buying a video, this is the only one I'm aware of that examines the subject, and it does so quite decently. Given the possibility of losing many frustrating hours by making just a few easily avoidable mistakes, it just might be a worthwhile expense for you at just under fifty bucks list.

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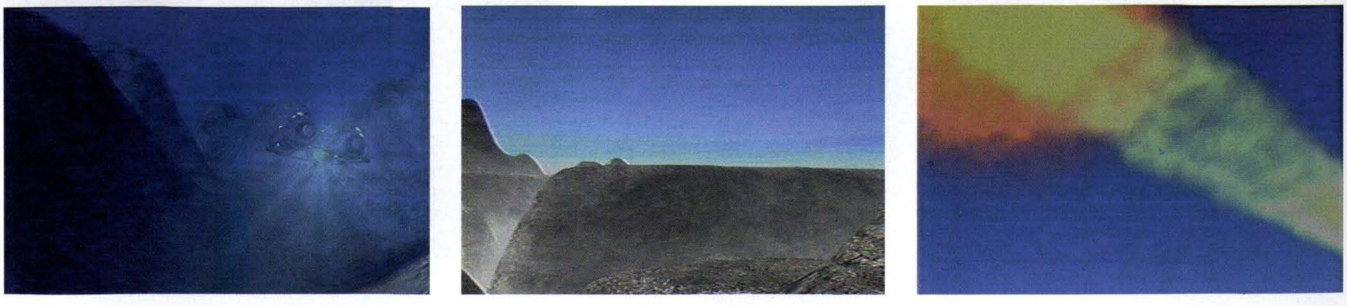
Steamer Video $49.95
www.desktopimages.com/desktop/



Various frames from the video.

(Pyromania Review - Continued from page 26)

These luxuriant explosions bloom out from a center point. Some have little flakes of debris that flicker out too. Other versions also exhibit the effect of wind. After the effect blooms out, it decays, while moving off screen as though the camera were moving past the explosion. There are also sequences of extra sparks and debris for a little more oomph.

COMPACT DISC-O INFERNO

The Fire directory has all manner of flame effects. There's a Rolling Fire sequence of an explosion blowing down a corridor (look out for the backdraft!). Interactive lighting appears on the walls of the corridor for added realism (with careful creation of alpha channels, you could retain these lighting effects in a 3D corridor that you create). The guide suggests using this effect as a texture for text. This would be especially cool if your text were against a black background- then the letters wouldn't become visible until the fire was in its full glory.

There's a trail of fire, suitable for 'Back to the Future' DeLorean-style twin fire trails. There's also a strip of fire-trail that loops seamlessly. You can use the Fire Trail together with the looping fire, to make the sequence last as long as you like. With some processing, these flames would make a sensational border for text. You could use different frame offset values in LightWave to get the strips of fire to start at different times so that they won't look like simple mirror reflections all around your text. If you were to use the 'rings of Saturn tutorial' in the LightWave manual as a template, you could morph this fire strip into a ring of flame.

MISCELLANEOUS VARIOUS

I love miscellaneous stuff. My house is a big miscellaneous bin! Pyro Pro's Miscellaneous section is replete with scorching treasures. These elements are not as specifically targeted as the other explosions on the disc, but are a 'hotbed' of creative fun.

One 'transition' uses a massive explosion to wipe across the screen. I expect to see this in lots of demo videos from now on! There's a looping sequence of the shower of sparks coming from a fuse, suitable for your civil war cannon animation or your 'Mission Impossible' intro. To complement the fuse sequence you'll find a matchstick flame, complete with matchstick! There are two more looping sequences, the laser and spark 'hits.' Either or both of these make a good end for a laser blast. The 'laser hit' looks like a series of streaks originating from a center point for a stylized energy discharge, while the 'sparks hit' is there to hit home that you've really hit home.

Among the more unusual elements on the disc are the 'fire banners.' These resemble little 'squiggly lines of fire' tracing a circular or rectangular shape. My initial thought for these is to pop some text in the middle and let the fire do its flammable eye candy dance. A LightWaver, however, doesn't stop at such mundane tactics. Try using these as plasma barriers, or electrified metal plates. Colored differently they could be a highly volatile polygon virus eating away at the edges of your objects.

Then, the jewel in the crown: the exploding car! While my 83 Cutlass does a perfectly good job of this on its own, your car may not be as disposable as mine. The VCE crew blew up a 1/4 scale model of a Mercedes. Your job is to matte this onto a LightWave object, or real video footage of a car. Don't let my mention of a Mercedes worry you. A fairly generic looking 90's car silhouette is blown up. You could easily 'drop in' a Ford Taurus - this is the car that VCE 'blows up' in the example video. This does require some fairly precise alignment, so PyroMania Pro thoughtfully provides a template. The template looks 'green-screen ready' for those of you working on video-assist productions, but I wish VCE had provided data on the placement of the car - i.e., camera distance and angle, lens, etc. This would help LightWave artists specifically.

KEEP RENDERING TILL THE SMOKE GETS IN YOUR EYES...

The user guide supplies for using the imagery with Adobe Premiere and PhotoShop, but how do LightWavers make use of it? The easiest way would be to load them as a background or foreground image sequence. The background sequence lets all of our action happen up front, while you'd have to make sure to have an alpha channel available for a foreground sequence.

Don't know what an alpha channel is? Well, you should definitely bone up, since you'll realize the most success when you 'alpha-composite in' these pyrotechnic images. Briefly, alpha channels are 256 level grayscale images that sandwich between a foreground and a background layer. The alpha image determines how much of the foreground is transparent.

Let's imagine you want to place a bitmap image of text into a LightWave scene. You create an image of your colorful text against a black background. You want to cut out all the black, right? While you could use LightWave's ability to key out the black, this seldom looks as good as using an alpha channel. The alpha channel is another image, with white where you'd like 100% opacity (the text) - black where you'd like the imagemap to be transparent (the black background) - and various levels of gray to determine varying levels of opacity (the anti-aliasing around the edges of the text.)

Many of the effects do include alpha channels, but in some cases I've needed to improve upon them. While LightWave is quite a powerful compositor, it really only composites using RGB clipping and alpha channels. If you were using PhotoShop or ImageFX, you could use a compositing mode called 'Screen' that does quite a nice job of layering in explosions without an alpha. You may need to exert a little effort to create new alpha sequences. Alas, more billable time for us, right? While the prospect of having to create some alpha channels may seem daunting at first, it's really not difficult, and the results are definitely worth it.

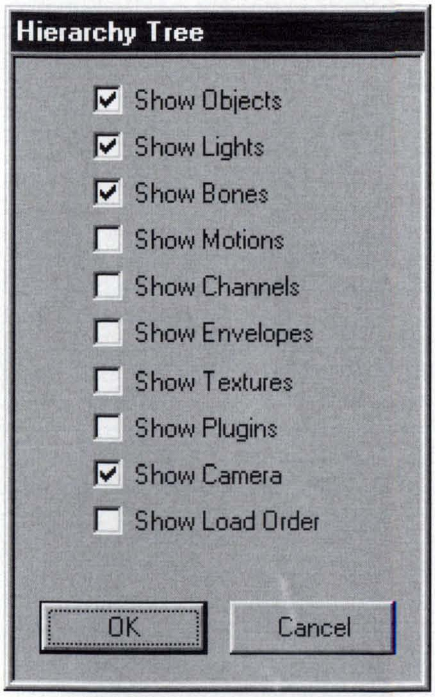
You may also need to crop some of the bigger images. It's unlikely that the sequences already in 720x540 resolution will need much modification, unless you want to save on RAM when loading up lots of image sequences. Ultimately, I tend to save images destined for LightWave in Amiga IFF format as it's much more RAM (and space) efficient than Targas are.

Another tip I can offer is to set your explosions in the dark (the daytime mushroom cloud being a notable exception). The user guide suggests a magic hour around twilight that gives explosions on film a lot of punch. Translating this advice to LightWave, your exploding scenes will look best in a dark environment.

The 'zing' in an explosion relates to how much, and how quickly it illuminates an area. It would be a good idea to set up a few lights to interact with your virtual environment. Flare a few orange and yellow lights (with a slight flicker envelope) for a few seconds... don't forget to add camera shake and some lens flares! In the future, we'll take a good look at a few sample projects using PyroMania CDs. The techniques aren't difficult, but they just might not be intuitive for everyone.

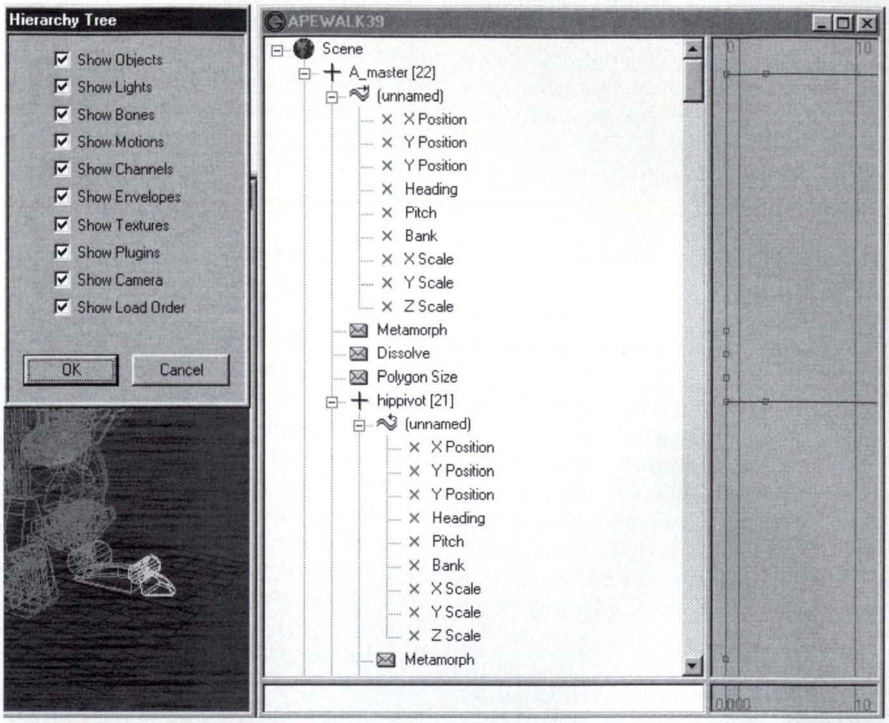
When you consider the expenditure required to produce effects with this quality, the discs represent good value even at twice the price (PyroMania One included a budget sheet showing what the VCE crew spent putting that disc together!) We've seen these explosions on network TV and in hot video games, so imagine how much you can elevate the level of your work using the PyroMania Pro CD set. There's a lot of great finished work for you to plug-and-play, and also enough raw material to give the seasoned artist something to work with. If you want to output to motion picture film, you can also buy the full film-res images. If your 3D leans toward special effects, or you need to add some virtual lighter-fuel to your project, pick up these CDs. It'll make LightWave sizzle, and it's safer than playing with matches.

Bohus Blahut owns and operates The Vantage Point, an editing, special effects, and 3D company. VP has recently released a tutorial video covering advanced techniques in ImageFX. (Oh, and Bohus promises to stop with the explosion jokes already. We threatened to fire him.) Contact Bohus via e-mail: bohus@xnet.com.



☑ Show Objects
☑ Show Lights
☑ Show Bones
☐ Show Motions
☐ Show Channels
☐ Show Envelopes
☐ Show Textures
☐ Show Plugins
☑ Show Camera
☐ Show Load Order

FIGURE 2. Hierarchy Dialog, set for Scene View options shown in Figure 1.



☑ Show Objects
☑ Show Lights
☑ Show Bones
☑ Show Motions
☑ Show Channels
☑ Show Envelopes
☑ Show Textures
☑ Show Plugins
☑ Show Camera
☑ Show Load Order

FIGURE 3. Hierarchy Dialog for the same scene as Figure 1, with all Scene View options turned on.

(Continued from page 27)

The last eight pages of the manual contain a tutorial showing the basic editing functions of the software. Unfortunately, the tutorial files called for were not on the installation diskette. (Very sloppy, CineGraphics.) You can work around this by choosing two of the character animations included with LightWave, and substituting them for the KeywalkMed and KeywalkJump scenes called for in the tutorial. The goal of the exercise is to copy an action from each scene and paste them together in a third, new scene.

KeyPro is noticeably lacking in online help. Instead of calling the standard Windows Help function, which should at least describe the menu options and major dialogs, the Help menu only calls a splash screen with KeyPro's version number and the contact information for CineGraphics. You should definitely print out and read the KEYPRO_V2.TXT file, as it contains the keyboard shortcuts and other important tips.

What KeyPro Does

KeyPro enables you to load a series of LightWave scene files, select part or all of the scenes' hierarchies, and paste, append, or blend those hierarchies and/or their motions to another scene. This enables you to quickly assemble and edit complex animation sequences from a stock library, transfer actions from one character to another, or rapidly edit an existing action within a single scene. This is a very powerful set of tools.

KeyPro is designed to manipulate data from several LightWave scenes, so it uses its own Project window to hold them. Versions 2.02 and later allow you to save sets of scenes as KeyPro Project files. This feature is critical to saving your time and data when your system locks up. Saving project files is also useful to serious character animators and small studios, who need to recall groups of scene files over a long period of time or to share them among a production team. The structure of the project files is consistent with LightWave's native files, a plain text file that is easy to understand and edit:

```
KP_Project
C:\NEWTEK\SCENES\ROBOTS\APEWALK39.LWS
C:\NEWTEK\
C:\NEWTEK\SCENES\ROBOTS\Aperun52.lws
C:\NEWTEK\
```

The first line tells you this is a KeyPro project file. The second line is the full path and filename of the first scene loaded in the project. The third line is the content directory path for the preceding scene file. Successive line pairs provide the scene paths and filenames and the content directory paths for the project's remaining scenes. If you are careful, you can type up a KeyPro project file from scratch, to include all your character's current scene files. I believe this feature will be useful to many character animators.

If you intend to build a library of character actions or poses, the most efficient method is to save a duplicate scene file (with an appropriate name) whenever you create a new pose or action that seems reusable. This way, you can preserve your data without interrupting your animation workflow. It's simple, fast and intuitive to look at a list of scenes with names like APEWALK32, knowing that the scene contains a walk cycle for the Ape robot that hooks up at 32-frame intervals.

With KeyPro, you can create a master project for each character, containing a separate scene for each action and pose. The project file (being easy to read) can serve as summary notes for these scene files, as long as you choose appropriate scene filenames that describe the actions, poses, and hookup frames. This is a simple, logical system, keeping all the labels for the character data in a single place and tied to the actual data paths. This can be a big help if you are sharing files across a network or through a complex hierarchy of directories. I can't speak for all LightWave animators, but I use a variety of drives and media to archive my work. If I can't pull up a scene file directly from a CD-ROM or Zip disk backup, but instead have to first copy it (and all supporting files) to a particular directory, that's inefficient and annoying. KeyPro has a robust, reasonable approach I wish more software would support.

To get some idea of KeyPro's display, take a look at Figure 1. This is a fully-expanded view of the APEWALK39.LWS scene file that ships with LightWave.

See figure 1.

The Project window displays the scenes that are loaded in the current project. If the globe icon for a scene is dimmed, it won't appear in the Perspective View. In Figure 1, only the first scene, APEWALK39, is made visible. The Perspective View window shows a wireframe of the active scene, similar to LightWave's own perspective view. There are no options for shaded, Camera or Light views, but the most useful view editing options are available, including Zoom, Rotate, Move, and Play Bounded. The Perspective View playback seems to be a function of system speed and window size; you can interactively scale the window during playback to get the frame rate you want. This is pretty slick, especially when you consider that this is a standalone program, not a LightWave plugin. You can be running KeyPro on one machine, editing and tweaking animations, while your LightWave dongle is busy elsewhere.

If you open one of the scene files from the Project window, it displays in the Scene View window (labeled APEWALK39, at the right of Figure 1). You can choose what information to display from the Hierarchy Tree dialog, Figure 2. Figure 1 shows one of the simpler selections; Figure 3 shows everything. This is a nice way of controlling the amount of information you have to deal with, providing easy access to the details you need while hiding the extraneous distractions.

See figures 2 & 3.

You can open a separate Scene View window for each scene in a project. This enables you to see, for example, all the Left Hip channels for a number of scenes. KeyPro enables you to select a channel, object, Bone or hierarchy, copy its motion, then select a comparable item in another scene and paste (replace entire action), append (add to the end of existing actions), or blend the copied data with the selected items.

KeyPro manages data according to hierarchies. If you want to transfer motions from one character to another, or even between different instances of the same character, you must make sure that both character hierarchies are identical. For example, the Ape robot provided with LightWave has several scene files, including both walk and run cycles. The hierarchy for the walk is different from the hierarchy for the run, so you can't directly copy-and-paste motions for the entire hierarchy. You might end up with the actions for an arm being used to move a leg.

The advantage to this approach is that you don't have to worry about naming items consistently. For example, suppose you have several characters in a scene, and you consistently named their parts. Since LightWave automatically renames duplicates, you'll end up with item names like LTHIP, LTHIP(2), and LTHIP(3) as labels for the same part on three separate characters. If KeyPro insisted on editing actions by item name, you couldn't make changes to any character but the first one loaded. KeyPro's management of motion data by hierarchy bypasses LightWave's renaming problem, and enables you to edit as many characters in a scene as you like. If you want to use KeyPro, keep your character hierarchies consistent.

The Blend Motion option captured my interest when I first spotted it. The KeyPro manual states it "blends or interpolates motion between the original and new motion data." For a character animator with a deadline, the prospect of being able to blend several actions from a motion library is very attractive. Unfortunately, Blend works by dropping a key on every frame, for every item. The action is impossible to edit efficiently after the blend; it's like working with motion capture files. If you have actions that are already keyed on every frame, blend might be useful for mixing them; otherwise, I think it causes more trouble than it's worth.

One of the problems with animating a complex character hierarchy in LightWave is the load order. The items you need to manipulate most often are seemingly never the ones near the top of the Selected Item list. You can either waste time scrolling, or try to pick out the item from a spaghetti-mess of object and Bones. KeyPro removes this problem by enabling you to edit the load order of a scene. You can use Current Object|Load Earlier to move the animation handles you use most to the top of the list, and Load Later to bury the least-used items at the bottom. This is also handy for ordering lights, since OpenGL uses the first lights in the list. You can simply shift the key light(s) to the top of the list, so OpenGL shading renders a more accurate picture of your revised lighting.

KeyPro also has basic editing tools for adding items to a scene. Combined with drag-and-drop hierarchy editing, this is the easiest and fastest way to assemble a complex scene for LightWave. You'll still need to tweak a lot of details in LightWave itself, but for the initial setup KeyPro is the way to go.

Pesky Details

The designers of KeyPro seem to have a spotty grasp of the LightWave animator's needs. On the positive side, instead of requiring the user to return to the menu bar again and again, they have enabled the right mouse button to pop up a tools menu appropriate to the active window. This cuts the therbligs (separate, definable actions) for each operation in half, making your work easier and faster. The more you work with KeyPro, the more you'll appreciate this "minor" enhancement. Another nice touch is that most of the program's functions are duplicated in the menu bar, toolbars, and pop-up menus, so you can use whichever method is more comfortable or faster for you. KeyPro also maintains the Windows-standard keyboard equivalents for undo, open, new, save, delete, copy and paste.

On the negative side, CineGraphics has committed several oversights in the design of the KeyPro user interface. One is the Toolbars menu; each toolbar toggle should be checkmarked when the toolbar is visible. They aren't. Also, many of the keyboard shortcuts listed in the KeyPro_v2.txt file are not marked, either in the menus or on the toolbars. This makes it just a little harder for new users to become experts by using the keyboard to work more efficiently. CineGraphics also decided to use Q for Select All, when the more common equivalent is Ctrl-A, which KeyPro uses for Append Key Frames. I think that particular gem is often going to be followed immediately by a Ctrl-Z.

CineGraphics seems to have the right idea in developing software: give the people what they need, when they need it. KeyPro's ongoing improvement makes this review a snapshot of a moving target. By the time you read this, there are sure to be major improvements and new features in the latest version of KeyPro. If you think you may have use for KeyPro, I encourage you to contact CineGraphics for the latest information. I know I'll be using KeyPro, and you can expect to read about it in future Character Shop columns.

A Demo version of KeyPro is located on the LightWavin' CD-ROM.

CineGraphics
4370 La Jolla Village Dr. Suite 640
San Diego, Ca. 92122
760-727-5589
http://www.cinegraphics.net
Keypro 2.02 Intel $299 /Alpha $399

(Fractalizer - Continued
from page 43)

Value	Position
0	45
200	50
0	55

The Transparency settings are as follows:

Value	Position
100	45
0	50
100	55

In this way, the Luminosity fractal is a 'negative image' of the Transparency fractal. This makes it possible to superimpose the lightning image on the sky image. Texture size of the lightning object should be longer in the Y direction and shorter in X and Z, as most lightning are oblong. Again, the lightning is animated by applying texture velocity along the Z axis. Falloff along the X axis was applied to disguise the rectangular shape of the lightning object.

Note: The basic idea of the lightning is similar to that of electric sparks as described in the Fractalizer documentation.

CANDLE FLAME

(For the Candle animation see the LightWavin' CD-ROM.

It's very easy to create realistic fire using Fractalizer. Details of the candle itself are not relevant here. Its flame was modeled by stretching a ball object along the Y axis and inserting two bones: one parent and one child. The child bone was moved upwards, and its size was reduced to 10 percent of the original. The flame sways as the result of moving the child bone around in random fashion. The surface was created using Fractalizer's Luminosity and Transparency channels, with texture size stretched along the Y axis. Edge transparency in the LW settings should be set to Transparent, producing undefined flame edges. Also, the Additive option should be on, as is the usual practice with fire textures. Texture velocity settings should have the following values: circa 10 percent of the object size along the Y axis upwards, and not more than 1 percent along the X and Z axis. Most realistic flame is obtained by setting the Luminosity spectrum as follows:

Value	Position
0	0
200	50
35	100

Transparency settings are not very important, though the texture must be transparent all over, without any opaque areas. For another version of fire see the Fractalizer documentation.

RUST

Examine figure 5. The effect of rust in this image was obtained using Falloff, Opacity Fractal and Color spectrum. The color settings are presented below:

R = 202, G = 117, B = 0, Position = 0
R = 111, G = 31, B = 0, Position = 50
R = 130, G = 71, B = 0, Position = 100

The Opacity Fractal was stretched along the Y axis to produce oblong patches of rust. Its settings follow:

Value	Position
0	34
100	50
25	75
0	100

This makes one of the rust patch edges contrast sharply with the background, for a realistic effect. To make the rust patch edges look naturally jagged set Fractal Depth to 5 bits. The Falloff feature was used to make the rust appear only under the leaking pipe connection.

MARBLE

Take a look at figure 6. This surface was made using only the Diffuse and Specularity channels. The technique is similar to that of the lightning... a thin streak of darker shade is produced by setting the Diffuse spectrum in the following way:

Value	Position
100	45
85	50
100	55

This time, the texture is stretched along the X axis so the darker streaks are mostly horizontal. Fractal settings in the Specularity channel are the same - this makes the lighter areas appear more shiny than the darker streaks. Again, for a different type of marble see the Fractalizer documentation.

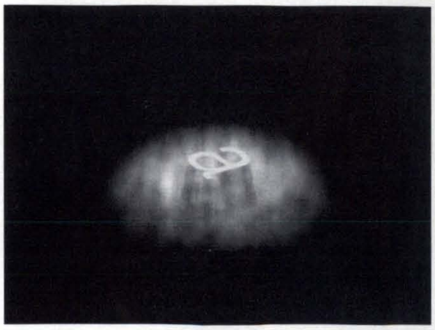


Figure 8

TREE BARK

The basic idea here is the same as marble, except the Color channel was used instead of Specularity, and the texture is stretched along the Y axis. The small green patches of moss were produced by another Fractalizer activated in the second plug-in slot. See figure 7.

VOLUMETRIC SMOKE

Fractalizer is also capable of producing the effect of volumetric smoke or fog. See figure 8.

The trick is to quickly move a flat object with a fractal texture up and down, with world coordinates on, and LightWave's motion blur activated.

These are but a few examples of Fractalizer's possibilities. Others include realistic explosions made using Fractalizer's unique morphing feature (see the documentation for details), as well as all sorts of electric, atmospheric and fire effects. Fractalizer also makes it possible to create an unlimited number of solid noise surfaces. All kinds of stone, rusted or tarnished metal, damp walls, wood, and many others can be produced, as well as underwater images with 'reflexes' of light. As has already been said, Fractalizer is extremely flexible. In the hands of an imaginative animator it can work wonders!

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Snaking Objects Along a Path

By Mark Turney

I'm sure that many of you have wanted to conform objects to twisting and curving paths inside your animations, whether it be an undulating animal, a string of text doing loops, or a slug crawling over a rock. Other 3D programs have offered this capability for years and many users have been clamoring for its addition to LightWave. Strangely enough, the means to accomplish this feat have been familiar parts of LightWave since at least version 3.5. I came across a way to conform objects to a curving path quite accidentally and within this article I will share a refined technique for conforming your objects to curved paths using LightWave's native tool-set.

The key to the technique is the use of morph targets coupled with bones. LightWave deforms an object using its morph target before it uses the object's bones to deform it and we will use this aspect of the program to create twisting motion paths. First, we will use a morph target to push our object forward along a straight line. At the same time we will use a bone skeleton which is in the shape of our desired curving path. Since the bone skeleton deforms the morphed object, the straight movement created by the morph will be curved through the bone path.

This first of three tutorials will basically demonstrate the technique and explain some finer points which will save you time when you are using it. If you have the LightWavin CD, I suggest grabbing the folder titled Content_Dir in my section of the CD and copying it to your hard drive. Once it is copied, set LightWave's content directory to that folder.

Tutorial 1: Snaking Cows (Introductory Tutorial)

It's true that cows aren't known to twist and bend along the paths that they travel. However, they are good test objects for organic deformation and its almost tradition to abuse the poor beasts in such demonstrations, so I chose the LightWave cow object as my first victim.

1. Load the cow object into Modeler, center it using the LW_Center plug-in, and save the cow as Cow_1.lwo. Observe which direction the cow is facing. This is the cow's starting point along its twisting path in Layout.

2. Move the cow about 3 cow lengths (8.1m) along the z-axis in a positive direction and save the cow as Cow_2.lwo. This is the cow object's morph target which will push the cow into the z-axis.

3. Load Cow_1 and Cow_2 into Layout.

4. Turn the object dissolve (Objects panel, Appearance Options sub-panel) of Cow_2 up to 100%. This object is Cow_1's morph target and we never have to see it again.

5. Switch to the Top view (XZ) and zoom close to Cow_1, so that it almost fills the screen. Select the Cow_1 object and switch to bones edit mode. You will now add the bones to Cow_1 which will become the path that the cow follows as it is morphed along the z-axis.

6. Press the + key on the keyboard (add bone) and a bone will appear pointing positively toward the z-axis with its base at the object's origin point.

7. Move the bone backwards along the z-axis only, so that its base now extends slightly past the tail of the cow. Keyframe the bone.

8. Shorten the Rest Length of the bone so that it is approximately 1/6th the length of the cow (.47m). Make sure you do not change the Size of the bone, only the Rest Length.

- NOTE: Each bone becomes a segment of the twisting motion path. If the segments are too large, then the object will noticeably pinch when moving from one bone to another. On the other hand, if you make the bones too small, you will waste a lot of time rotating each bone into position when fewer bones could have accomplished the same effect. In my experience, using bones which are 1/6th the length of the object are a good tradeoff, but depending on the nature of your animation you may want to use smaller or larger bones.

9. Click the Rotate button and turn off Pitch and Bias, allowing you to only change the Heading of the bone. Once the bone is constrained to rotate only on its Heading, you'll activate the bone by typing the r button on the keyboard

10. Add 19 more children bones by pressing the = key 19 times.

- NOTE: All of the children will already be activated and will be set to rotate only along their Heading, which matches the parent bone's settings.

- EXPLANATION: It is very important that all of the bones must be rotated after they are activated. If you rotate bones before they are activated, you are simply dictating the resting position of those bones. The resting position of bones is only used to determine the starting point of the deformation of the object, which is created by further movement of the bones after they have been activated. If the bones are curved in their resting positions, then no deformation will occur and the object will morph along a straight path between Cow_1 and Cow_2. Because of this, you can't draw bones into place (using the new Draw Bones tool in 5.5) and you can't use the cool Modeler Skeleton Maker plug-in because both of these tools position bones before they are activated. However, you can use IK on the bone chain, which will be covered in tutorial 3.

11. Zoom back so that all the bones are visible, select bone 8, and Rotate it about -5 degrees. Press the down arrow key so that bone 9 is selected and Rotate it about -7 degrees. Continue up the chain, rotating the bones along their Headings, so that the resulting chain of bones looks like the chain in Figure 1. When the bones are all in place, cre-

ate a keyframe for all items.

- NOTE: The reason that we constrained the rotation of the bones to only Rotate along their Headings is that the cow's path will only snake from left to right. It will significantly speed the setup of your bone path if you constrain the initial bone to the movement that the path will take, as we have done with the cow's bone path.

12. Go into the Objects panel and select the Cow_1 object. Select Cow_2 as its morph target and click the envelope button for the morph amount. Create a keyframe at frame 60 and enter a morph amount of 140% at that frame. Click on Use Envelope and close the Objects panel.

- NOTE: The Cow_1 object is being morphed into the Cow_2 object which pushes it positively along the z-axis and along our chain of bones.

- NOTE: The Cow_2 object wasn't moved far enough up the z-axis for the morphed cow to stretch to the end of the chain of bones we created. We morphed the Cow_1 object past the Cow_2 object along the z-axis by morphing Cow_1 into Cow_2 at a percentage higher than 100%. This is an important point to remember in your own animations, so that you aren't forced to re-open Modeler and move the Cow_2 object further up the z-axis.

13. Make a wireframe from 0-60 and watch the cow gracefully snake along our path of bones. Set up the camera, light the scene to your liking, make the background a lighter color than black (so that the black spots on the cow don't blend into the background), and render out an avi. For those of you with the LightWavin CD, you can watch a movie of the finished cow (Cow_fin.avi) and load the finished tutorial scene file (Cow_A.lws).

Now that you have finished tutorial 1, you should understand the principles behind this technique. In the following tutorials I will elaborate on this even further so that it will offer more functionality in your future animations.

Tutorial 2: Looping Text

A lot of you out there are stuck doing logo treatments from time to time, myself included. So here is a tutorial which some of you might use on your next logo project. Using a text object, I will demonstrate the creation of cleanly looping and twisting paths, along with bulging and shrinking of the objects using those paths.

1. Open Modeler and create a text object along the z-axis so that you can read what is typed in the ZY (side) Modeler window. In order that your object will match this tutorial, use the Olnova Heavy font and use the word "LightWavin" for the text in the object.

2. Extrude the text -0.5 m along the x-axis and center it using the LW_Center plugin. Once you have surfaced the text object to your liking, save it as Text_1.lwo.

- NOTE: We center the object before saving it so that the thickest part of the object will run through the bone path that we will create in layout. If the object lies to one side of the bone path, the deformation of the object along the bone path will be uneven.

3. Move the object about 3 object lengths (16.2m) in a positive direction along the z-axis and save the resulting object as Text_2.lwo.

- NOTE: Whenever using these techniques, moving the object about 3x its length along the axis you want the object to travel works well.

4. Load both objects into Layout and set the object dissolve of Text_2 to 100%.

5. Switch to an overhead view. Zoom in to Text_1 so that it fills the screen. Select Type_1 on the objects list and switch to Bones edit mode. Press the + key and a new bone will appear. Move this bone backwards along the z-axis only, so that its base extrudes past the end of the text (-2.9m on the z-axis). Keyframe the bone.

6. Change the Rest Length of the bone so that it is approximately 1/6th the length of the text object (.9m) and create 39 children bones by pressing the = key 39 times.

7. Select bone 9, click the Rotate button in the mouse edit buttons, and press n to open up the Numeric requester. Starting with bone 9, change the Heading to 3 and the Pitch to -15. Press the down arrow key to continue on to bone 10 and change its Heading and Pitch to the same values. Continue to change these rotational values in all the bones between 9 and 39. Its good to keyframe all items every 20 bone modifications or so, just in case you hit the wrong button and lose all the rotations you've been working on. This is a pretty repetitive step, but it provides for a beautifully round path. When you are finished, your bone path should look like the one in Figure 2.

- NOTE: The alterations in Pitch will curve the bone path into a circle, while the changes to Heading push the circles down the x-axis, so that the path becomes a coil.

8. Open the objects panel and select the Text_1 object. Select Text_2 as its morph target and click the envelope button for the morph amount. Create a keyframe at frame 60 and enter a morph amount of 115% at that frame. Create another keyframe at 120 and enter a morph amount of 0%. At keyframe 0 and 120 set the Tension to 1 in the Spline Controls requester. The text will morph around the circular path between frame 0 and 60 and then morph back to its original position between frame 60 and 120.

9. Switch to the side view and position the view so that the text and the circular path of bones are visible. Create a wireframe from 0 to 120 and watch the results. The text object should start straight and then twist along the circular path and return to its original position.

10. Now we will observe what happens when we change the Size of the bones along the bone chain. Select bone 27 and change its Size from 1.0 to 2.0 along all axis. All of the children of bone 27 will also grow in size. Select bone 32 and change its size from 1.0 to .5 along all axis. All of the children of bone 32 will now shrink in size in sympathy. Create another wireframe from 0 to 120. You should now notice that the text object bulges as it passes through bones 27 through 31. By increasing or decreasing the size of the bones in the chain, you can make the object that is passing through them bulge or shrink.

Now that you have finished the looping text tutorial, twist different bones in the chain and experiment with all of the different shapes you can come

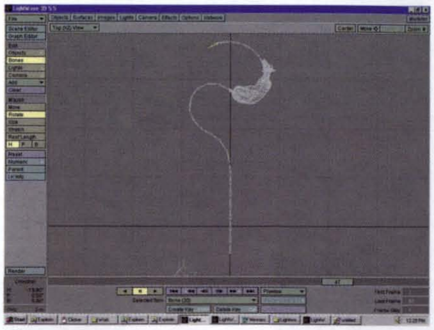

Figure 1

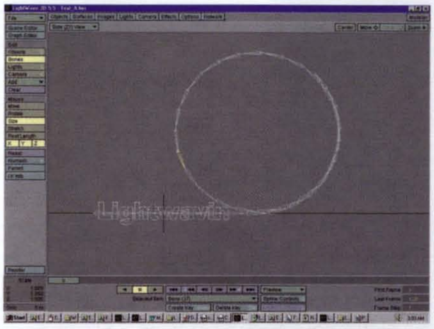

Figure 2

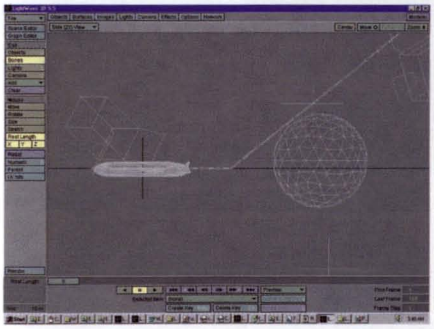

Figure 3

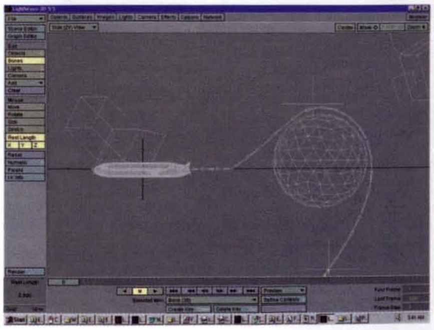

Figure 4

up with.

Tutorial 3: Slugs and IK

This is the tutorial you've all been waiting for. Positioning our bones into the right path can become quite time consuming and IK is just the work-around the doctor ordered. Another trick that I have saved for last is to twist the bones in the path while the object is traveling along it. In this tutorial, you will load a slug object from the LightWavin CD and using IK on the bone path, you will animate it crawling over a sphere and turning its head.

- WARNING: I only recommend using the IK in LightWave 5.5 for this task. I fired up 5.0 and tried this tutorial in it, only to wind up with a kinked and scrambled chain of bones. Not only was the IK chain unusable, but it took 10 times as long for it to come up with an IK solution. The IK in 5.5 is a thing of beauty!

1. If you have the LightWavin CD, open Slug_A into Modeler. If you don't have the LightWavin CD, make a box in Modeler which measures 1m x 1m x 5 m and has 10 x 10 x 20 segments (x,y,z). This box will serve as a stand-in for the slug object on the CD. Save either object as Slug_1.lwo

2. Move the object 15m along the z-axis and save it as Slug_2.lwo.

- NOTE: It is very important to keep your objects facing into the positive z-axis. The reason that this alignment is so important, is that bones first appear facing that direction and if your object faces another direction, you must rotate the first bone in the bone chain to align it with the object. This can disorient the animator as to which axis is which when moving the bones in complex chains and can also yield premature gimbal lock and unanticipated IK results.

3. Load both objects into Layout and set the object dissolve for Slug_2 to 100%.

4. Select Slug_1 and switch to Bones edit mode. Switch to the top view and zoom in so that Slug_1 fills the screen. Add a bone by pressing the + key and change its Rest Length to .8 (about 1/6th the length of the slug). Move the bone along the z-axis so that its base protrudes past the bottom of the object (-2.65 m).

5. Activate the bone by pressing the r key and create 29 child bones by pressing the = key 29 times.

6. Those of you with the LightWavin CD, load the Sphere.lwo object into Layout. Those of you without the LightWavin CD, create a sphere which has a radius of 2m in Modeler and load it into Layout. Move the sphere to (0, .4, 9.15) and change its size to 1.22 along all axis. This sphere is the object that the slug will crawl over. Switch to the side view and zoom back so both the slug and the sphere are visible.

7. Open the Objects panel and add 2 null objects. Each of these null objects are going to be IK handles to pull and tease the bone chain into place. We want the slug to crawl along the ground until it reaches the base of the sphere. Bone 9 is at a good distance from the sphere, so select bone 9 and enter its IK options by typing the letter i. Click on the Unaffected By IK of Descendants button, so it and all of its parent bones will lie flat and will be unaffected by further IK manipulation further down the chain.

8. Select bone 16 and open its IK panel. Make null 1 its goal object, set the strength of the goal object to 2, and turn on Full-Time IK. Move null 1 to (0, 3.35, 8.75) and keyframe it at frame 0. This is the first IK goal and will pull the middle of the bone chain above the sphere. This is demonstrated in Figure 3.

9. Select bone 30 and open its IK panel. Make null 2 its goal object, set the strength of the goal object to .5, and turn on Full-Time IK. Move null 2 to (0, -5.2, 9.6) and keyframe it at frame 0, 60, and 120. Set the Spline Control Tension to 1 at keyframes 60 and 120. Move null 2 to (7.1, -.6, 11.4) and keyframe it at frame 90. Null 2 is the goal for the end of the chain and as such, it will pull the end of the bone chain around the ball. This is demonstrated in Figure 4. Null 2 is keyframed to swing back and forth once the slug has reached the top of the ball and in turn, to move the slug's head back and forth. Figure 5 is a picture of the slug morphed onto the sphere with its head tilted to one side due to the bone chain under the influence of null 2.

10. Open the Objects panel and select Slug_1. Make its morph target Slug_2 and open the morph amount envelope. Make keyframes at frame 60, 120, and 180. Change the morph amount at frame 60 to 60%, at frame 120 to 60%, and at frame 180 to 120%. Set the Spline Control Tension to 1 at frame 60 and 120. This morph envelope pushes the slug up the sphere and then stops while the IK null is waving the bones around. Once the IK null is finished, the morph envelope continues to pull the slug down the other side of the ball.

11. Move the Camera to (8, 5.3, 15) and Rotate it (-132, 23, 0) and make a wireframe preview from frame 0 to 180. If you have the LightWavin CD, you can look at a finished rendered example of the slug and its path using IK.

Hopefully, I've passed on all my little secrets for this "unknown" LightWave trick. However, for all the good that this technique accomplishes, it comes with a price. Because you are using bones to deform an object along a path, you can't use bones for their regular job of moving parts of the object around. With that said, you'll have to determine which animations call for this technique and which ones will not work with it. I hope you get good use out of the article and fill the world with wiggling and snaking animated objects.

Play with this technique, add it to your repertoire, and if you ever come up with anything that makes it even more useful, drop me an email at mturney@itw.com and let me know what you've come up with.

For the past 4 years, Mark Turney has been the sole LightWave animator at an innovative video production house. Mark is also concurrently in the process of opening a LightWave based visual effects company. If you want to contact Mark, email him at mturney@itw.com.

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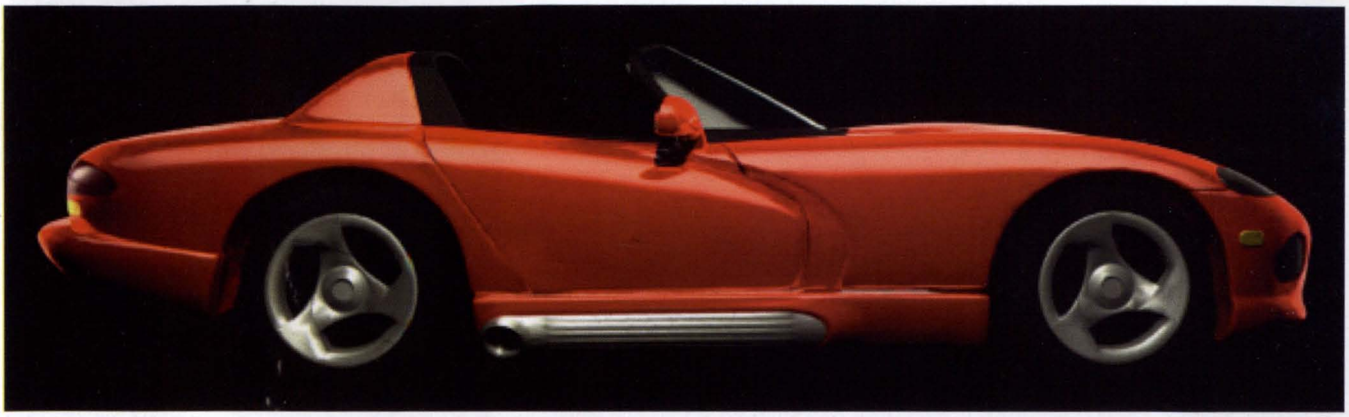
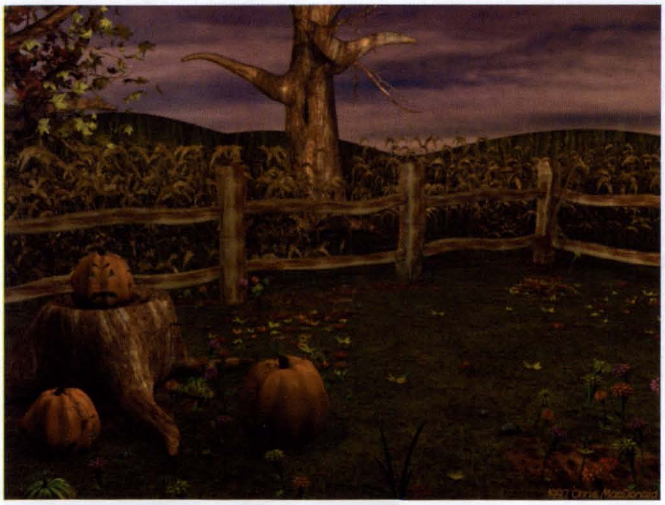
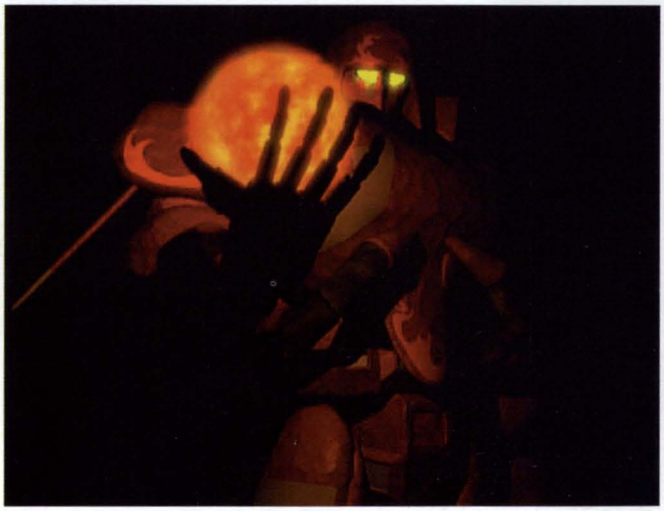
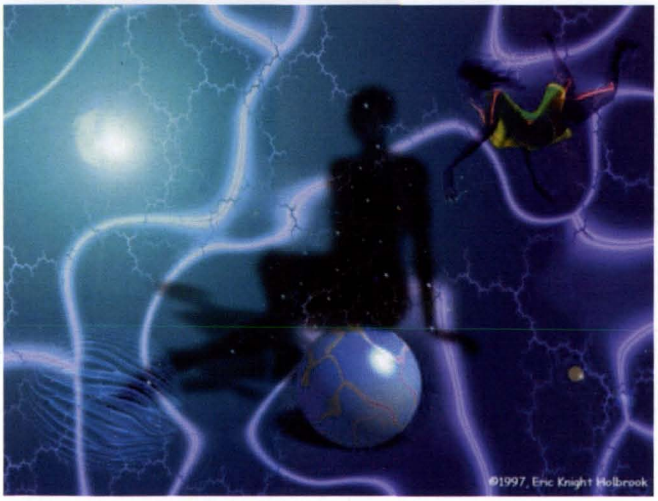
IMAGE GALLERY



VIPER - The Viper image was something I wanted to try after I saw the work Eric Barba did for Dodge. Mine does not come close to his work, but it was a major learning process, and Eric was kind enough to show me a few tips on how to light vehicles. Thanks Eric! - (C)opyright Robert Nederhorst Email : throb@throb.net www.throb.net



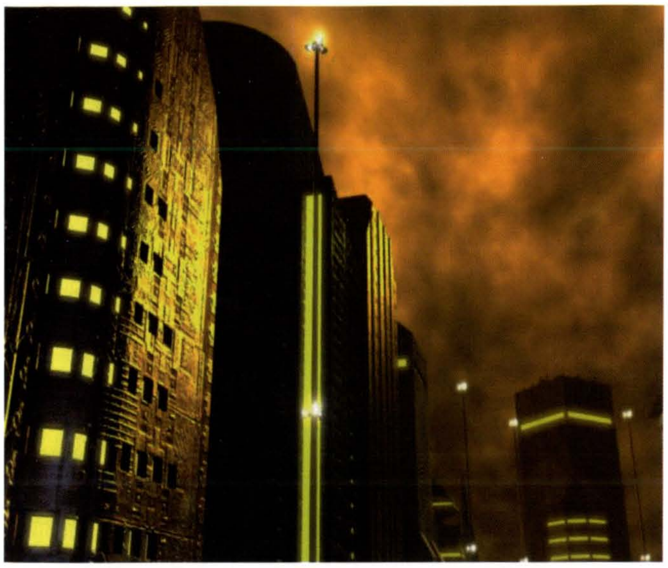




FLAMIUS - (Above) The fire guardian robot protecting the main character. This model was created as a bet with my previous employer. He challenged me to a character modeling competition to be completed in a week. I won. It took two days to model Flamius. Through the process, I learned the importance of slicing, stencilling and the boolean function. Copyright Tay Hwah Tang E-mail: zecom@mbox3.singnet.com.sg

AUTUMN HARVEST - (Middle Left) This image took me about 15 hours to model and texture, and another 3 hours to render. It has 444,812 polys, 34 surfaces, 13 images, and 48 objects. This is one of my most complex scenes to date. Basically what it is, is a view of the backyard of a rural homestead. In the background you can see the corn that is ripe for picking (for the cows that is...) The leaves are falling, the pumpkins are carved, and the weather is beautiful. In this image, I tried to really portray the feeling of "autumn". I hope you like it. - (C)opyright Chris McDonald

HOPE - (Bottom Left) Rendered on a 166 MHz Pentium with 96 megs of RAM. (C)opyright Eric Knight Holbrook



CITYSCAPE - Another image by Robert. The city animation was something he did to see what he could do with a nasty futurescape. - (C)opyright Robert Nederhorst

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HARD DAY AT THE MIDWAY - In this image spent a great deal of my time modeling all of the different attractions in this carnival. The ferris wheel was particularly time- consuming due to the large amount of detail necessary to create it realistically. I believe that this image was greatly enhanced by the moody atmosphere created with fog and the use of spotlights. Created in Lightwave 5.0 and Photoshop 4.0. - (C)opyright Chris MacDonald

Three more images by Eric Knight Holbrook. The image below and to the left (Flight of Angels) took 2 hours to create - Machine Specs for this image: 166 MHz Pentium, 32 megs of RAM. - Rendering Time: 10 minutes. The above image (To be) and the bottom right (Hell) were all rendered on a 166 MHz Pentium with 96 megs of RAM. We received so many great images at LightWavin' Magazine by Eric that we've included many of them on the next two pages of our expanded Image Gallery! (C)opyright Eric Knight Holbrook

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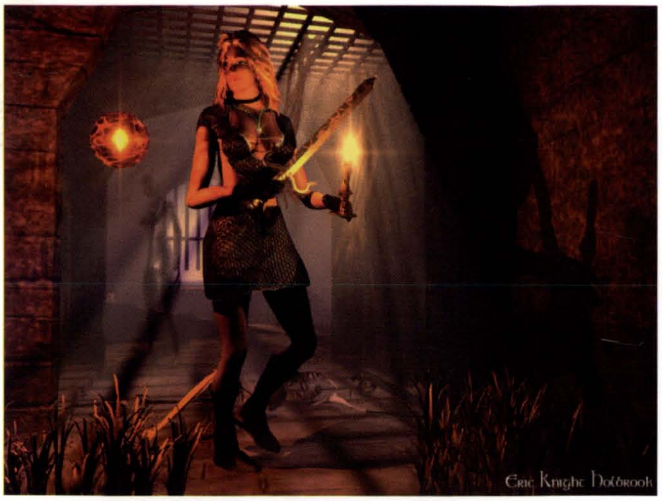
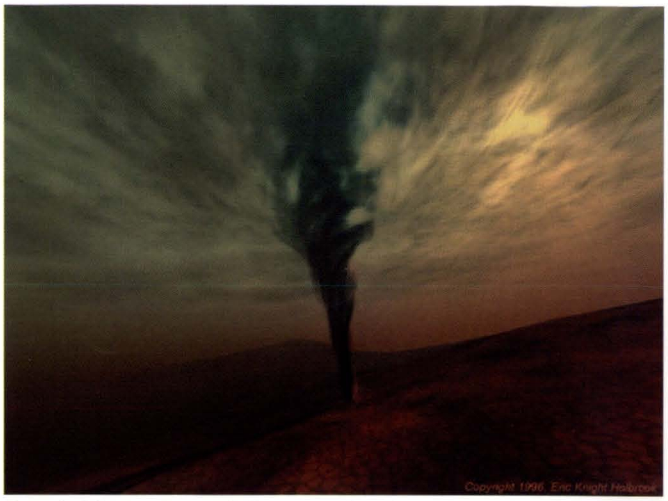
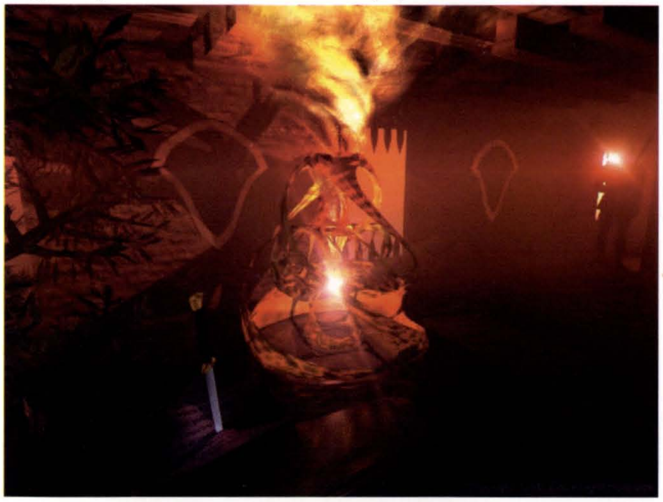


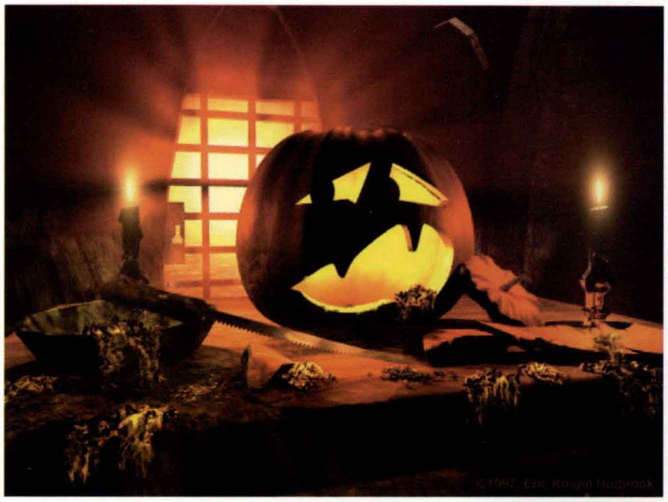
The Warrior Princess Xaera - Xaera originated as a Poser1 model - Image & Scene creation time: 6 hours - Machine Specs: 300 MHz Pentium II, 80 megs of RAM. - Rendering Time: 12 minutes (Rendered at 1280 x 960) - Description: As She leaves her Evil father's Somewhat Rundown Castle in search of Dragons and other large feisty and unpredictable creatures, Xaera notes a strange red orb to her right. In fact, this orb took it upon itself to position it's presence in front of my virtual canvas just as I painted the last stroke of pixels and I'm still trying to figure out why. Perhaps if it appears again in the sequel, it will make it's purpose known to us. We shall see.



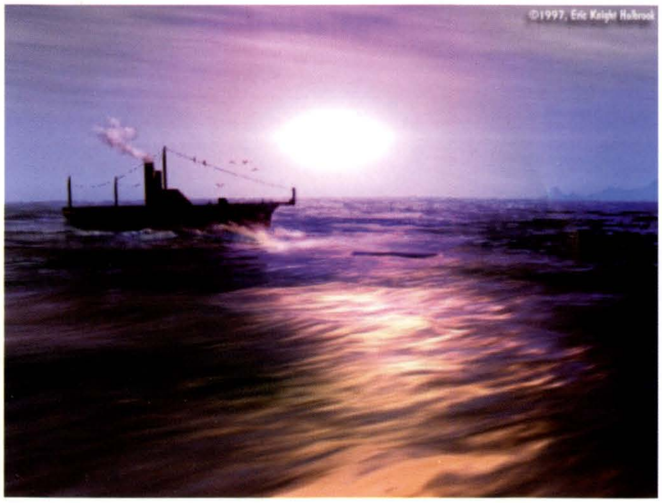
Tornado Watch - Image & Scene creation time: Many minutes - Machine Specs: 166 MHz Pentium, 48 megs of RAM. - Rendering Time: 15 minutes - Inspiration: Not the movie, god forbid. Description: I saw the movie Twister after I made this image. This is one of those images that simply happened because of something I was playing with that turned into looking sort of interesting. I didn't plan it, it simply was. Of course then when I realized it had potential, I finished it.



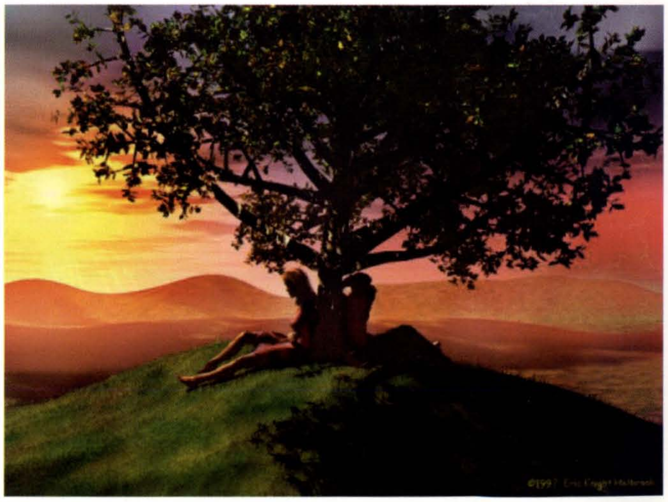
Sorcery - Image & Scene creation time: 4 hours - Machine Specs for this image: 166 MHz Pentium, 32 megs of RAM. - Rendering Time: 20 minutes - Description: The Forgotten Knight checks his entry into the Wizards Chamber. Either the Wizard left the stove on too long, ...or he's devising some new spell.



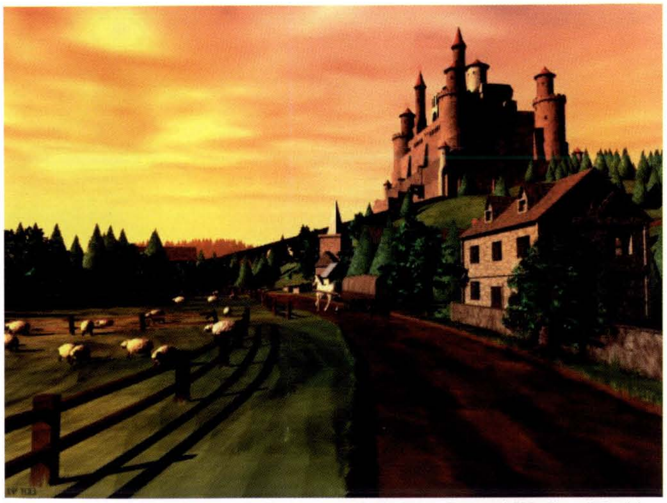
The Carving, A Halloween Murder - Image & Scene creation time: 8 hours - Machine Specs: 166 MHz Pentium, 48 megs of RAM. - Rendering Time: 15 minutes - Inspiration: Halloween - Description: What every pumpkin fears come October 31st. The knives come out, that cackling laughter begins, horrible deeds ensue...



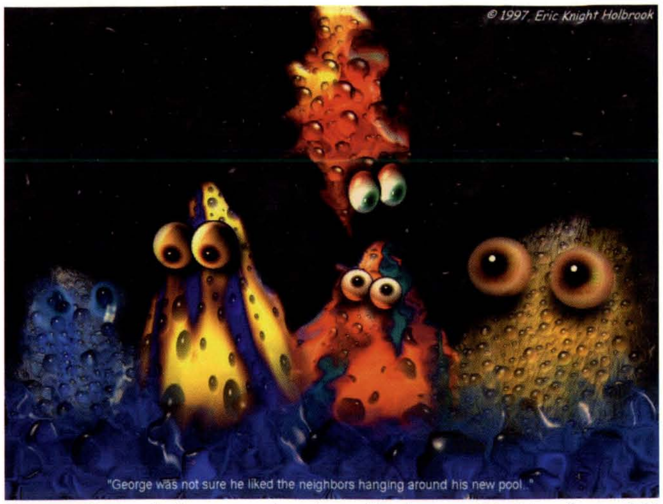
Sea at Dawn - Image & Scene creation time: 1 hour - Machine Specs: 166 MHz Pentium, 48 megs of RAM. - Rendering Time: 5 minutes - Inspiration: Mowing the lawn.



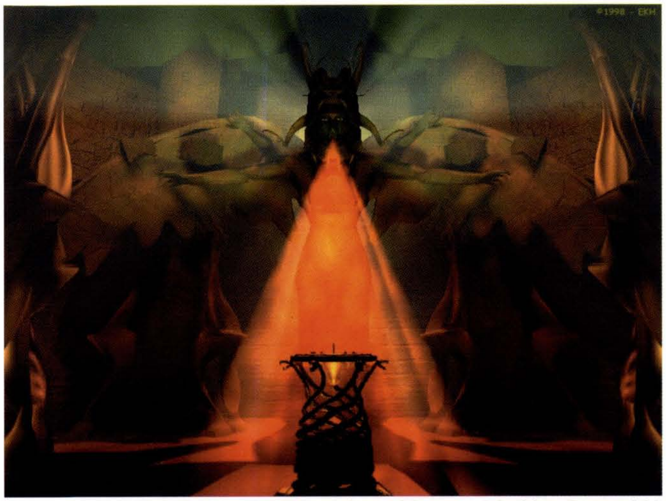
To Dream of Summer - Image & Scene creation time: 4 hours - Machine Specs: 166 MHz Pentium, 48 megs of RAM. - Rendering Time: 20 minutes - Description: Two people sitting up on a hill, wondering and watching and thinking...



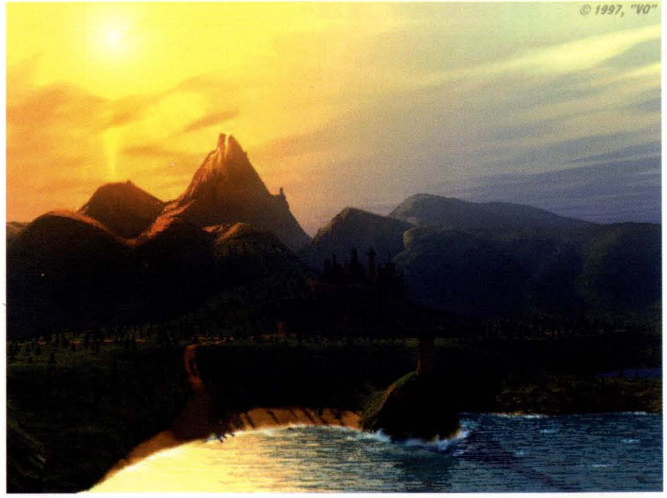
Returning at Dusk - Image & Scene creation time: Several Weeks - Machine Specs for this image: 166 MHz Pentium, 98 megs of RAM. - Rendering Time: 35 minutes - Description: Returning At Dusk, a pastoral scene of sheep grazing and a castle rising above the road. This image is part of the Darkland series of images and seen down on the road leading into town from the West.


© 1997, Eric Knight Holbrook
"George was not sure he liked the neighbors hanging around his new pool.."

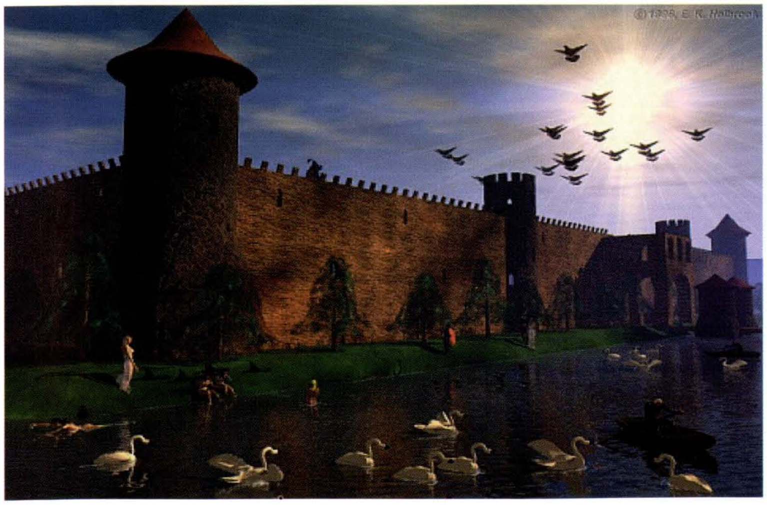
George - Image & Scene creation time: 45 minutes - Machine Specs: 166 MHz Pentium, 48 megs of RAM. - Rendering Time: 20 minutes - Inspiration: My Lighter side - Description: While the caption reads, "George was not sure he liked the neighbors hanging around his new pool", one is left wondering.... so which one is George?



Demoness - Image & Scene creation time: 6 hours - Machine Specs: 300 MHz Pentium, 80 megs of RAM. - Rendering Time: 12 minutes - Description: "A winged, fire breathing female demon lurking on the southern end of her den." The scene requirements included an hourglass that had to be illuminated by a volumetric light source. What the light source was supposed to be was up to me, as was the design of the room and pretty much any objects that were in the room.



Darklands - Image & Scene creation time: Many days - Machine Specs: 166 MHz Pentium, 48 megs of RAM. - Rendering Time: 15 minutes - Inspiration: Too much coffee - Description: An image in the Darkland / Darkwall series. This is, despite other descriptions to the contrary (can't always remember what I've written, ya know), the actual first image in the series and is something of a "demo" shot to wow the "neighbors" (so to speak) before the actual scene was entirely built. The castle in this image, what little can be seen, was actually hand-drawn in to visualize what my goals were. As you can see, the pier, many of the roads, all the houses and farms, and yes, even the sheep, aren't here yet. What IS here is the dramatic countryside and mountainous landscape and gorgeous sunset behind it all.



The Castle of Swans - Image & Scene creation time: 6 hours - Machine Specs: 166 MHz Pentium, 48 megs of RAM - Rendering Time: 15 minutes - Inspiration: A Cold cup of coffee.

If you have images you would like to submit for inclusion in our Gallery, please upload them to ftp.lightwavin.com/incoming along with a text file description of what you are submitting. We encourage you to also upload any animations you may have. Please consider compressing your images and animations with a ZIP utility before uploading.

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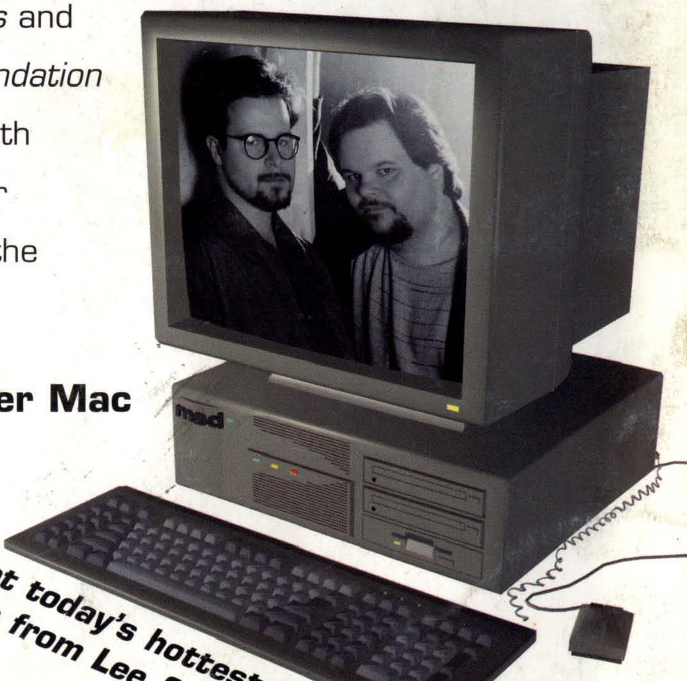

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